

Access DB# 204231

# SEARCH REQUEST FORM

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Requester's Full Name: James McClellan Examiner #: 752-1 Date: 10-11-06  
 Art Unit: 1711 Phone Number: 302-1074 Serial Number: 1723, 062  
 Mail Box and Bldg/Room Location: 10079 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please see attached

\*\*\*\*\*

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V  
Anekwe, Imelda (ASRC)

204231

**From:** SANZA MCCLENDON [sanza.mcclendon@uspto.gov]  
**Sent:** Tuesday, October 10, 2006 1:56 PM  
**To:** STIC-EIC1700  
**Subject:** Database Search Request, Serial Number: 10/723,062

**Requester:**  
SANZA MCCLENDON (P/1711)  
**Art Unit:**  
GROUP ART UNIT 1711  
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SCIENTIFIC REFERENCE BR  
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OCT 11 RECD

Pat. & T.M. Office

**Case serial number:**  
10/723,062  
**Class / Subclass(es):**  
528/74.5  
**Earliest Priority Filing Date:**  
11/26/03  
**Format preferred for results:**  
Paper  
**Search Topic Information:**  
please search the pre-polymer of claims 9-14. thank you  
**Special Instructions and Other Comments:**



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Bib Data Sheet

CONFIRMATION NO. 8634

<b>SERIAL NUMBER</b> 10/723,062	<b>FILING OR 371(c) DATE</b> 11/26/2003 <b>RULE</b>	<b>CLASS</b> 522	<b>GROUP ART UNIT</b> 1711	<b>ATTORNEY DOCKET NO.</b> GXA 002A
<b>APPLICANTS</b> Han Xiong Xiao, Bloomfield Hills, MI; <b>** CONTINUING DATA *****</b> This appln claims benefit of 60/429,440 11/27/2002 <b>** FOREIGN APPLICATIONS *****</b>				
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED** SMALL ENTITY **</b> ** 03/10/2004				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged _____ Examiner's Signature Initials		<b>STATE OR COUNTRY</b> MI	<b>SHEETS DRAWING</b>	<b>TOTAL CLAIMS</b> 22 <b>INDEPENDENT CLAIMS</b> 4
<b>ADDRESS</b> Gary C. Cohn PLLC 1147 North Fourth Street Philadelphia, PA19123				
<b>TITLE</b> Process for preparing functionalized oils; adhesives and coatings and interpenetrating polymer networks prepared from the functionalized oils				
<b>FILING FEE RECEIVED</b> 446	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

## ABSTRACT OF THE DISCLOSURE

Glycerides of acids having conjugated groups of aliphatic carbon-carbon double  
5 bonds, such as tung oil, are functionalized by reaction with certain polyol compounds  
at mild conditions. The functionalized oils are useful in a variety of coating and  
adhesive applications. They can be cured with melamine-formaldehyde, urea-  
formaldehyde, benzoguanimine-formaldehyde and/or glycoluril-formaldehyde resins.  
They can be reacted with polyisocyanates to form polyurethanes, and urethane-group  
10 containing prepolymers. Of particular interest are water-dispersible prepolymers,  
which can be used to make anionic, cationic or nonionic polyurethane dispersions for  
coating, adhesive and sealant as well as composites applications.

WHAT IS CLAIMED IS:

1. A method for forming functionalized esters of carboxylic acids, comprising  
5 heating a mixture including (1) a polyol compound having at least 3 primary hydroxyl groups/molecule and a melting temperature of 220°C or below and (2) a di- or triglyceride of one or more carboxylic acids, said heating being conducted under conditions sufficient to form a mixture of hydroxyl group-containing esters of said acids.  
10
2. The method of claim 1, wherein the at least 50% by weight of the carboxylic acids have a conjugated group of at least two aliphatic carbon-carbon double bonds, and said heating is conducted under conditions sufficient to form a mixture of hydroxyl group-containing esters of said acids in which at least 80% of the conjugated  
15 groups are unreacted.
3. The method of claim 2 wherein the carboxylic acids having a conjugated group of at least two aliphatic carbon-carbon double bonds contain 3 or 4 conjugated aliphatic carbon-carbon double bonds.  
20
4. The method of claim 3 wherein the carboxylic acids are  $\alpha$ -eleostearic acid, catalpic acid, puniic acid, calendic acid, jacaric acid,  $\alpha$ -parinaric acid, or bosseopentaenoic acid.
- 25 5. The method of claim 4 wherein the di- or triglyceride is a plant or animal oil.
6. The method of claim 5 wherein the plant oil is tung oil.
7. The method of claim 6 wherein the polyol compound is trimethylolpropane, di-  
30 trimethylolpropane or trimethylolethane.

8. The method of claim 2, wherein the mixture also contains a plant oil that does not contain a di- or triglyceride of one or more carboxylic acids of which carboxylic acids at least 50% by weight have a conjugated group of at least two aliphatic carbon-carbon double bonds.

5

9. A hydroxyl- or isocyanate terminated, polyurethane group-containing prepolymer containing pendant aliphatic hydrocarbyl groups of from 8 to 22 carbon atoms, wherein at least 20% by weight of such hydrocarbyl groups contain a conjugated group of at least two aliphatic carbon-carbon double bonds.

10

10. The prepolymer of claim 9 wherein said conjugated groups contain 3 or 4 aliphatic carbon-carbon double bonds.

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11. The prepolymer of claim 10 which is the reaction product of a polyisocyanate and a functionalized oil having free hydroxyl groups.

12. The prepolymer of claim 11 wherein the functionalized oil is a functionalized tung oil.

20

13. The prepolymer of claim 12 which is isocyanate-terminated.

14. The prepolymer of claim 11 which is water-dispersible.

25

15. A dispersion of polyurethane particles in an aqueous phase, wherein the polyurethane particles contain pendant hydrocarbyl groups having a conjugated group containing at least two aliphatic carbon-carbon double bonds.

16. The dispersion of claim 15 wherein the conjugated group contains at least three aliphatic carbon-carbon double bonds in conjugation.

30

17. The dispersion of claim 15 wherein the pendant hydrocarbyl group is derived

from tung oil.

18. A method for making a dispersion of polyurethane particles, comprising

- 5 A. forming a water dispersible, isocyanate-terminated prepolymer by reacting a stoichiometric excess of a polyisocyanate with an isocyanate-reactive composition, the isocyanate-reactive composition including at least (1) an isocyanate-reactive compound having pendant hydrocarbyl or substituted hydrocarbyl groups that contain at least two aliphatic carbon-carbon double bonds in conjugation and at least one of (2) an isocyanate-reactive compound containing an anionic or cationic group or precursor to such an anionic or cationic group or (3) an isocyanate-reactive, nonionic hydrophilic compound;
- 10 B. if component (2) is used and contains a precursor to an anionic or cationic group, neutralizing said precursor to form an anionic or cationic group,
- C. dispersing the isocyanate-terminated prepolymer to form a plurality of prepolymer droplets stably dispersed in an aqueous phase; and
- 15 D. reacting the dispersed isocyanate-terminated prepolymer with a chain extender to form a plurality of polyurethane particles stably dispersed in an aqueous phase.

19. An adhesive comprising the dispersion of polyurethane particles of claim 15.

20

20. The adhesive of claim 19, further comprising a melamine-formaldehyde, urea-formaldehyde, benzoguanimine-formaldehyde and/or glycoluril-formaldehyde resin, or mixture of two or more thereof.

25 21. The adhesive of claim 19, further comprising a polyvinyl alcohol or a phenol-formaldehyde resin, or a mixture thereof.

22. The adhesive of claim 19, which cures to form an interpenetrating polymer network.

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FILE 'HCAPLUS' ENTERED AT 17:51:07 ON 17 OCT 2006

L1 2702 SEA XIAO H?/AU  
L2 131 SEA FUNCTIONALIZ?(2A)OIL#  
L3 0 SEA L1 AND L2  
L4 10124 SEA INTERPENETRAT?  
L5 45 SEA L1 AND L4  
L6 0 SEA L1 AND TUNG#

FILE 'REGISTRY' ENTERED AT 17:54:49 ON 17 OCT 2006

L7 E A-ELEOSTEARIC ACID/CN  
1 SEA "A-ELEOSTEARIC ACID"/CN  
E CATALPIC ACID/CN  
L8 1 SEA "CATALPIC ACID"/CN  
E PUNICIC ACID/CN  
L9 1 SEA "PUNICIC ACID"/CN  
E CALENDIC ACID/CN  
L10 1 SEA "CALENDIC ACID"/CN  
E JACARIC ACID/CN  
L11 1 SEA "JACARIC ACID"/CN  
E A-PARINARIC ACID/CN  
L12 1 SEA "A-PARINARIC ACID"/CN  
E BOSSEOPENTAENOIC ACID/CN  
L13 1 SEA "BOSSEOPENTAENOIC ACID"/CN

FILE 'LCA' ENTERED AT 18:15:52 ON 17 OCT 2006

L14 54 SEA (HYDROXY? OR OH OR HO OR ALC# OR ALCOHOL##) (2A) (TERMI  
NA? OR ENDCAP? OR ENDGROUP? OR ENDBLOCK? OR ENDUNIT? OR  
END? (2A) (CAP OR CAPS OR CAPPED OR CAPPING# OR GR OR  
GROUP? OR BLOCK? OR UNIT?))  
L15 19 SEA (ISOCYANAT? OR NCO OR OCN OR RNCO OR OCNR) (2A) (TERMIN  
A? OR ENDCAP? OR ENDGROUP? OR ENDBLOCK? OR ENDUNIT? OR  
END? (2A) (CAP OR CAPS OR CAPPED OR CAPPING# OR GR OR  
GROUP? OR BLOCK? OR UNIT?))  
L16 1003 SEA ((FATTY# OR LONGCHAIN? OR LONG##(W)CHAIN## OR  
ALIPHATIC? OR ALIPH# OR ALKANOIC? OR HEXANOIC? OR  
CAPROIC? OR HEPTANOIC? OR ENANTHIC? OR OCTANOIC? OR  
CAPRYLIC# OR NONANOIC# OR PELARGONIC# OR DEC!NOIC# OR  
CAPRIC# OR OBTUSILIC#) (2A)ACID#)/BI,AB  
L17 113 SEA ((CAPROLEIC# OR UNDECANOIC# OR DODEC!NOIC# OR



LAURIC# OR LAURILEIC# OR TRIDECANOIC# OR TETRADEC!NOIC#  
OR MYRISTIC# OR MYRISTOLEIC# OR PENTADECANOIC# OR  
HEXADEC!NOIC# OR PALMITIC# OR PALMITOLEIC# OR HEPTADECANO  
IC#) (2A)ACID#)/BI,AB

L18 238 SEA ((MARGARIC# OR DATURIC# OR OCTADEC!NOIC# OR STEARIC#  
OR OLEIC# OR PETROSELINIC# OR VACCENIC# OR NONADECANOIC#  
OR EICOS!NIC# OR ARACHIDIC# OR GADOLEIC# OR HENEISANOIC#  
OR DOCOS!NOIC# OR BEHENIC# OR CETOLEIC#) (2A)ACID#)/BI,AB

L19 22 SEA ((ERUCIC# OR TRICOS!NOIC# OR TETRACOS!NOIC# OR  
LIGNOCERIC# OR SELACHOLEIC# OR PENTACOSANOIC# OR  
HEXACOS!NOIC# OR CEROTIC# OR HEPTACOSANOIC# OR OCTACOSANO  
IC# OR MONTANIC# OR NONACOSANOIC# OR TRIACONTANOIC#) (2A)A  
CID#)/BI,AB

L20 112 SEA ((MELISSIC# OR DOTRIACONTANOIC# OR LACCEROIC# OR  
TRITRIACONTANOIC# OR TETRATRIACONTANOIC# OR PENTATRIACONT  
ANOIC# OR HEXATRIACONTANOIC# OR HEPTATRIACONTANOIC# OR  
OCTATRIACONTANOIC# OR TALLOW# OR COCO# OR COCONUT# OR  
LINOLEIC#) (2A)ACID#)/BI,AB

L21 119 SEA ((LINOLENIC# OR ARACHIDONIC# OR ELAIDIC# OR RICINOLEI  
C#) (2A)ACID# OR EMERSOL# OR HYDROFOL# OR HYSTRENE# OR  
LUNAC OR PRIOLENE#)/BI,AB

L22 3 SEA (PENDANT? OR SIDECHAIN? OR SIDEARM? OR SIDE#(2A)(CHAI  
N? OR ARM OR ARMS OR ARMED OR ARMING#)) (3A)((L16 OR L17  
OR L18 OR L19 OR L20 OR L21))

L23 1 SEA GRAFT?(3A)((L16 OR L17 OR L18 OR L19 OR L20 OR L21))

FILE 'HCA' ENTERED AT 18:24:50 ON 17 OCT 2006

L24 27327 SEA (HYDROXY? OR OH OR HO OR ALC# OR ALCOHOL##) (2A)(TERMI  
NA? OR ENDCAP? OR ENDGROUP? OR ENDBLOCK? OR ENDUNIT? OR  
END?(2A)(CAP OR CAPS OR CAPPED OR CAPPING# OR GR OR  
GROUP? OR BLOCK? OR UNIT?))

L25 5538 SEA (ISOCYANAT? OR NCO OR OCN OR RNCO OR OCNR) (2A)(TERMIN  
A? OR ENDCAP? OR ENDGROUP? OR ENDBLOCK? OR ENDUNIT? OR  
END?(2A)(CAP OR CAPS OR CAPPED OR CAPPING# OR GR OR  
GROUP? OR BLOCK? OR UNIT?))

L26 802 SEA L22 OR L23

L27 0 SEA (PENDANT? OR SIDECHAIN? OR SIDEARM? OR SIDE#(2A)(CHAI  
N? OR ARM OR ARMS OR ARMED OR ARMING#)) (3A)(TUNG#(2A)OIL#  
)

L28 3 SEA GRAFT?(3A)(TUNG#(2A)OIL#)

L29 190701 SEA POLYURETHAN## OR URETHAN##

L30 0 SEA L28 AND L29

L31 3 SEA (L24 OR L25) AND L26

L32 0 SEA L31 AND L29

L33 435 SEA (L7 OR L8 OR L9 OR L10 OR L11 OR L12 OR L13)

L34 2 SEA L33 AND L29

L35 0 SEA L33 AND L28

L36 0 SEA L33 AND L26  
L37 0 SEA L33 AND (L24 OR L25)  
L38 1 SEA L33 AND PREPOLYM?  
L39 4780 SEA (L24 OR L25) AND PREPOLYM?  
L40 0 SEA L39 AND L33  
L41 0 SEA L39 AND L28  
L42 0 SEA L39 AND L26  
L43 10 SEA L26 AND PREPOLYM?

FILE 'REGISTRY' ENTERED AT 18:35:27 ON 17 OCT 2006  
E TUNG OIL/CN

L44 1 SEA "TUNG OIL"/CN

FILE 'HCA' ENTERED AT 18:36:12 ON 17 OCT 2006

L45 4795 SEA L44 OR TUNG#(2A)OIL#  
L46 35 SEA L45 AND PREPOLYM?  
L47 26 SEA L46 AND L29  
L48 4 SEA L47 AND (L24 OR L25)  
L49 0 SEA L47 AND L26  
L50 154 SEA L45 AND L29  
L51 11 SEA L50 AND (L24 OR L25)  
L52 1 SEA L50 AND L26  
L53 26 SEA L50 AND PREPOLYM?  
L54 9 SEA L28 OR L31 OR L34 OR L38 OR L52  
L55 21 SEA (L43 OR L51) NOT L54  
L56 22 SEA (L47 OR L53) NOT (L54 OR L55)  
L57 9 SEA L54 AND 1840-2003/PY,PRY  
L58 16 SEA L55 AND 1840-2003/PY,PRY  
L59 19 SEA L56 AND 1840-2003/PY,PRY

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=> d l57 1-9 cbib abs hitstr hitind

L57 ANSWER 1 OF 9 HCA COPYRIGHT 2006 ACS on STN  
138:272019 Grafting mechanisms in hybrid miniemulsion polymerization.  
Tsavalas, John G.; Luo, Yingwu; Schork, F. Joseph (Georgia Institute  
of Technology, School of Chemical Engineering, Atlanta, GA, 30332,  
USA). Journal of Applied Polymer Science, 87(11), 1825-1836  
(English) 2003. CODEN: JAPNAB. ISSN: 0021-8995.

Publisher: John Wiley & Sons, Inc..

AB The ultimate objective of hybrid miniemulsion polymn. is to produce a water-based crosslinkable coating through in situ grafting of a free radical growing acrylic polymer with an unsatd. resin. Certain authors have reported low grafting while others have reported higher. This article explores the factors that influence the grafting tendencies of these systems. Methacrylates such as Me methacrylate (MMA) have a sterically hindered radical center that lowers its reactivity toward unsatd. resin. This steric hindrance from the Me group forces grafting of this type of monomer to occur by abstraction of a hydrogen allylic to a resinous double bond. This chain transfer produces a relatively inactive radical on the resin that reduces the grafting efficiency. The transfer process also inherently produces some degree of terminated PMMA polymer within the particle. Grafting occurs in this type of system through termination of living PMMA chains with that radical produced on the resin. For relatively water-sol. monomers such as MMA, grafting efficiency is further lessened by homogeneous nucleation resulting from the monomer hydrophilicity. These newly created particles cannot contain alkyd due to its hydrophobicity and thus inability to transport across the aq. phase, and hence cannot produce grafted polymer. Nonetheless, degree of grafting of nearly 50% was obsd. in these systems. For hybrid systems involving an acrylate monomer such as Bu acrylate (BA), virtually complete grafting with alkyd was obsd. This is due to the uninhibited BA radical center allowing the mol. to add directly through a resin double bond. This process offers the possibility for complete grafting. Homogeneous nucleation is not involved in this system due to the insoly. of BA in the aq. phase. Resin double bond content and degree of conjugation also play an integral role in the grafting process.

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 42

IT **Tung oil**

(polymers, alkyd resin; **grafting** mechanisms in emulsion polymn. of acrylic monomers with alkyd resins)

IT Polymers, reactions

(**tung oil**, alkyd resin; **grafting** mechanisms in emulsion polymn. of acrylic monomers with alkyd resins)

L57 ANSWER 2 OF 9 HCA COPYRIGHT 2006 ACS on STN

136:87031 Structural characterization of natural polyisoprenes: solve the mystery of natural rubber based on structural study. Tanaka, Yasuyuki (Department of Chemistry, Faculty of Science, Mahidol University, Nakorn Phathom, 73170, Thailand). Rubber Chemistry and Technology, 74(3), 355-375 (English) **2001**. CODEN: RCTEA4. ISSN: 0035-9475. Publisher: American Chemical Society, Rubber Division.

AB Review. Structural characterization of naturally occurring polyisoprenes was carried out to solve the mystery of natural rubber (NR), such as the biosynthesis mechanism of rubber formation, the origin of outstanding properties of NR and the role of rubber in rubber trees. The NMR anal., based on terpenes and polyprenols as models, disclosed the structure of both terminal groups of rubber chain. Structural evidence indicated that the biosynthesis of rubbers from Lactarius mushroom and leaves of high plants starts from trans,trans-farnesyl diphosphate or trans,trans,trans-geranyl geranyl diphosphate and terminates by de-phosphorylation to form a **hydroxyl terminal** group. The biosynthesis of NR was presumed to start from unidentified initiating species contg. two trans-isoprene units and peptide group and to terminate forming a phospholipid terminal group. The initiating group of NR assocd. with proteins formed branch points, which can be decompd. by enzymic deproteinization. The branch points formed by phospholipid group were decompd. by transesterification with sodium methoxide. Rapid crystn. of NR was explained by the presence of mixed fatty acids synergistically with linked fatty acids, which were included in phospholipid. Satd. fatty acids linked to rubber chain induced crystn., while mixed unsatd. fatty acids acted as plasticizer and accelerated the crystn. rate. This was confirmed by the prepn. of model cis-polyisoprene **grafted with stearic acid**. The green strength of NR decreased to the same level as synthetic cis-polyisoprene after transesterification, indicating the effect of branching formed by the phospholipid terminal group and fatty acids in NR. The role of NR in Hevea trees was analyzed using NR from Hevea trees never tapped before. The formation of hard gel and oxidative degrdn. during the storage of NR in Hevea trees suggested that NR acted as a radical scavenger to remove hydroperoxide.

CC 39-0 (Synthetic Elastomers and Natural Rubber)

IT 6699-20-3D, Geranylgeranyl diphosphate, **hydroxyl-terminated** 13058-04-3D, Farnesyl diphosphate, **hydroxyl-terminated** 14691-59-9, Peroxide (HO21-)  
(structural characterization of natural polyisoprenes)

L57 ANSWER 3 OF 9 HCA COPYRIGHT 2006 ACS on STN

125:248833 Graft polymers with emulsifier properties. Kaufmann, Marita; Siol, Werner; Koralewski, Klaus; Nuccio, Santa M.; Wittkowski, Andrea (Rohm GmbH, Germany). Eur. Pat. Appl. EP 728780 A2 **19960828**, 8 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE. (German). CODEN: EPXXDW. APPLICATION: EP 1996-102119 19960214. PRIORITY: DE 1995-19506399 19950224.

AB The title polymers are prepd. by polymg. macromers prepd. from C8-30-alkyl methacrylates and bearing methacryloyl end groups with hydrophilic acrylic compds. in H2O-sol. solvents. Peroxide-initiated polymn. of a methacrylate ester of a C12-15 alc.

(Dobanol 25L) in the presence of HSCH<sub>2</sub>CH<sub>2</sub>OH at 85-110° gave an **OH** group-terminated polymer, transesterification of which with MMA in the presence of (iso-PrO)<sub>4</sub>Ti gave a methacrylate-terminated macromer (I) with viscosity no. (J) 10.8 mL/g and functionality >0.9. Peroxy ester-initiated polymn. of 36 g I with 144 g acrylic acid in 3-butoxy-2-propanol contg. 18 mg C<sub>12</sub>H<sub>25</sub>OH at 80-90° gave a 29% soln. of graft polymer which could be easily dild. with H<sub>2</sub>O to give solns. (e.g., 5%) which emulsified fats and oils in H<sub>2</sub>O.

IC ICM C08F290-04

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 46

IT 79-10-7DP, Acrylic **acid**, polymers with **fatty**  
-alkyl methacrylate macromers 79-41-4DP, Methacrylic **acid**  
, **fatty**-alkyl esters, polymers, **graft** polymers  
with acrylic acid

(**graft** polymers with emulsifier properties)

L57 ANSWER 4 OF 9 HCA COPYRIGHT 2006 ACS on STN

121:207727 Resin compositions for water-thinned anticorrosive coatings with excellent water resistance. Tagaito, Chika; Amemoto, Masahide; Oonishi, Kyoshi (Dainippon Ink & Chemicals, Japan). Jpn. Kokai Tokkyo Koho JP 06184492 A2 **19940705** Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-338713 19921218.

AB The compns. comprise codispersed products of (A) drying oil-modified vinyl-contg. epoxy ester resins and (B) drying oils, drying oil monoglycerides, drying oil-modified urethanated oils, drying oil-modified alkyd resins, or drying oil-modified epoxy ester resins. Thus, reacting 250 parts Epiclon 1050 with 250 parts linseed-oil fatty acid at 210° for 5 h, dilg. the resulting ester with Bu cellosolve and NK Ester M 90C, adding dropwise styrene 50, Me methacrylate 40, methacrylic acid 40, and tert-Bu benzoate 6 parts in the soln., reacting them at 100° for 5 h, and neutralizing the resulting product with Et<sub>3</sub>N gave 71.3%-nonvolatile resin, 54.4 parts of which was blended with 1.2 parts **tung oil** and with H<sub>2</sub>O to give a dispersion. A compn. contg. the dispersion 114.3, MA 100 2.0, Homocal D 23.0, NS 100 14.2, P-W-2 (anticorrosive pigment) 8.8, BYK 080 (antifoaming agent) 0.1, SN 373 (antifoaming agent) 0.2, and Dicnate 3111 (dryer) 0.6 part was sprayed on a soft steel plate and dried at 20° for 7 days to form a coating showing good water resistance.

IC ICM C09D151-08

ICS C08F242-00; C08L051-08; C08L067-06; C08L075-04; C09D163-10; C09D167-06

CC 42-9 (Coatings, Inks, and Related Products)

ST oil modified epoxy acrylic coating; anticorrosive coating acrylic epoxy resin; water resistance coating acrylic epoxy; **tung oil** acrylic epoxy coating

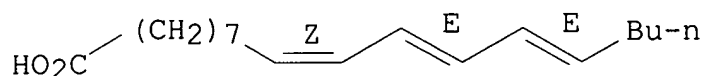
- IT **Urethane** polymers, uses  
(linseed oil-modified; water-thinned anticorrosive coatings with good water resistance)
- IT Safflower oil  
**Tung oil**  
(water-thinned anticorrosive coatings with good water resistance)
- IT 79-41-4DP, graft polymers with linseed-oil fatty acid-modified epoxy resins, Me methacrylate, and styrene, triethylamine salts  
80-62-6DP, graft polymers with linseed-oil fatty acid-modified epoxy resins, methacrylic acid, and styrene, triethylamine salts  
100-42-5DP, graft polymers with linseed-oil fatty acid-modified epoxy resins, methacrylic acid, and Me methacrylate, triethylamine salts 25068-38-6DP, Epiclon 1050, reaction products with linseed-oil **fatty acids, graft** polymers with methacrylic acid, Me methacrylate, and styrene, triethylamine salts  
(water-thinned anticorrosive coatings with good water resistance)
- L57 ANSWER 5 OF 9 HCA COPYRIGHT 2006 ACS on STN  
99:160114 Deodorization of ink binders: (Nippon Zeon Co., Ltd., Japan; Morimura Badische Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 58063703 A2 **19830415** Showa, 5 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1981-163076 19811013.
- AB Cyclopentadiene-based resin binders for inks are deodorized by treating with air or peroxides at high temps. Thus, 100 parts poly(cyclopentadiene) (softening temp. 135°, Gardner color 4) and 50 parts tung oil were heated at 170°, mixed with 4 parts maleic anhydride, heated 1 h at 180°, and treated 5 h with 1 part Zr octanoate at 240° to give a resin (softening temp. 120°, acid no. 14). The above resin was heated to 170° and treated with air (0.25 times vol. of resin every min) for 1 h to give deodorized resin having softening temp. 125° and acid no. 15. The resin had similar or superior performance as an ink binder compared to that from a similar resin without air treatment.
- IC C08F008-06; C09D011-10  
CC 42-12 (Coatings, Inks, and Related Products)  
IT 108-31-6D, polymers with cyclopentadiene and **tung oil** 542-92-7D, polymers with maleic anhydride and **tung oil** 2223-82-7D, polymers with cyclopentadiene, maleic anhydride and **tung oil** (**graft**, ink binders, deodorization of, with air or peroxides)

- L57 ANSWER 6 OF 9 HCA COPYRIGHT 2006 ACS on STN  
96:69644 Polymers containing chemically bonded metal atoms. Shaffer, Robert C. (Hitco, USA). U.S. US 4302392 A **19811124**, 7 pp. Cont.-in-part of U.S. 4,185,043. (English). CODEN: USXXAM.

APPLICATION: US 1979-84310 19791012. PRIORITY: US 1976-714403  
19760816; US 1978-893622 19780405.

- AB W(CO)<sub>6</sub> or Mo(CO)<sub>6</sub> is used with pyrrolidine to prep. a reaction product which is used with carboxy-contg. monomers or polymers for the prepn. of thermoplastic or thermosetting polymers contg. W or Mo. The polymers are useful as coating materials, for prepn. of carbonized ablative products, etc. Thus, 10 parts **prepolymer** prepd. from 1 mol maleic anhydride and 0.83 mol HOCH<sub>2</sub>CH<sub>2</sub>OH was mixed with 15 parts reaction product of W(CO)<sub>6</sub> and excess pyrrolidine and heated at 205° to prep. a viscous, dark thermoplastic.
- IT **506-23-0DP**, reaction products with tungsten hexacarbonyl-pyrrolidine complexes, polymers with Me methacrylate (prepn. of)
- RN 506-23-0 HCA
- CN 9,11,13-Octadecatrienoic acid, (9Z,11E,13E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



- IC C07D207-04
- INCL 260326220
- CC 35-7 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 42
- ST tungsten carbonyl additive polymer; molybdenum carbonyl additive polymer; polyester molybdenum tungsten; polyamide molybdenum tungsten; epoxy resin molybdenum tungsten; **polyurethane** molybdenum tungsten; vinyl polymer molybdenum tungsten; carboxylate polymer molybdenum tungsten; carbon polymer molybdenum tungsten
- IT Epoxy resins, preparation  
Polyamides, preparation  
Polyesters, preparation  
**Urethane** polymers, preparation  
(manuf. of molybdenum- and tungsten-contg.)
- IT 80-62-6DP, polymers with reaction products of octadecatrienoic acid and tungsten hexacarbonyl-pyrrolidine complexes 107-21-1DP, polymers with maleic acid and molybdenum and tungsten carbonyl-pyrrolidine complexes 110-16-7DP, polymers, reaction products with molybdenum and tungsten carbonyl-pyrrolidine complexes 111-40-0DP, polymer with reaction products of unsatd. polymers and tungsten hexacarbonyl-pyrrolidine complexes 112-24-3DP, polymer with maleic acid and molybdenum and tungsten carbonyl-pyrrolidine complexes 123-75-1DP, reaction products with molybdenum and tungsten hexacarbonyl and carboxy-contg. monomers and polymers **506-23-0DP**, reaction products with tungsten

hexacarbonyl-pyrrolidine complexes, polymers with Me methacrylate 3786-91-2DP, reaction products with tungsten carbonyl-pyrrolidine complexes, polymers 13939-06-5DP, reaction products with pyrrolidine and carboxy-contg. monomers and polymers 14040-11-0DP, reaction products with pyrrolidine and carboxy-contg. monomers and polymers 25068-38-6DP, reaction products with molybdenum and tungsten hexacarbonyl-pyrrolidine complexes 26009-59-6DP, reaction products with molybdenum and tungsten hexacarbonyl-pyrrolidine complexes 26471-62-5DP, polymers with reaction products of unsatd. polyesters and molybdenum and tungsten carbonyl-pyrrolidine complexes 27516-69-4DP, reaction products with molybdenum and tungsten hexacarbonyl-pyrrolidine complexes 28109-53-7DP, polymers with reaction products of tetracarboxycyclopentane and tungsten carbonyl-pyrrolidine complexes  
(prepn. of)

L57 ANSWER 7 OF 9 HCA COPYRIGHT 2006 ACS on STN

73:121615 Stabilized polymer dispersions in nonaqueous media. Finn, Stanley R.; Hasnip, John A. (Blundell-Permoglaize Ltd.). Brit. GB 1206442 **19700923**, 8 pp. (English). CODEN: BRXXAA.  
APPLICATION: GB 19670811.

AB A stabilizer for polymer dispersions in nonaq. media was prepd. from a polymer-grafted **OH** or **CO<sub>2</sub>H-terminated** alkyd resin having **fatty-acid ester side chains**. Thus, a mixt. of lauric acid, stearic acid, and xylene was esterified with pentaerythritol, and blended with phthalic anhydride to obtain a **OH-terminated** polyester, which dissolved in white spirits. The soln. was mixed with pyridine and methacryloyl chloride, and treated with alc. KOH to form the stabilizer. The stabilizer was mixed with a white spirits soln. of Me methacrylate (I) and azobisisobutyronitrile (II), and the mixt. was blended with a 2nd soln. of I, II, and Et acrylate to yield the stabilized polymer dispersion. The dispersion was stable for  $\geq 6$  months, compared to 2-3 weeks for a similar alkyd resin based on linseed oil fatty acids, and could be blended with TiO<sub>2</sub> to form a paint.

IC C08F

CC 42 (Coatings, Inks, and Related Products)

IT Acrylic acid ethyl ester

Methacrylic acid methyl ester, uses and miscellaneous  
(polymers with **hydroxyl-terminated** alkyd  
resins, graft, coatings)

IT 106-91-2 923-26-2

(polymers with **hydroxyl-terminated** alkyd  
resins, graft, coatings)

L57 ANSWER 8 OF 9 HCA COPYRIGHT 2006 ACS on STN

69:18550 Eleostearic acid derivatives. I. Reactions at the carboxyl



group. Thames, Shelby F.; Long, J. S.; Smith, O. D.; Jen, S. J.; Evans, J. M. (Univ. of Southern Mississippi, Hattiesburg, MS, USA). Journal of the American Oil Chemists' Society, 45(4), 277-80 (English) **1968**. CODEN: JAOCA7. ISSN: 0003-021X.

AB  $\alpha$ -Eleostearoyl chloride (I) was prepd. by action of  $\text{SOCl}_2$  on eleostearic acid.  $\alpha$ -Eleostearamide, m.  $112.5-14.5^\circ$ , was prepd. in 34% yield by action of  $\text{NH}_4\text{OH}$  on I. N-(2-Chloroethyl)- $\alpha$ -eleostearamide, m.  $86-8^\circ$ , was prepd. by reaction of I with ethylenimine at  $0^\circ$ . N-(2-Hydroxyethyl)- $\alpha$ -eleostearamide (II), m.  $85-6^\circ$ , was prepd. by reaction of Et glycinate-HCl with I in pyridine and dry ether. N-(2-Hydroxyethyl)- $\alpha$ -eleostearylamine (III), m.  $68-70^\circ$ , was prepd. by redn. of II with  $\text{LiAlH}_4$  in ether. N-(2-Chloroethyl)- $\alpha$ -eleostearylamine was prepd. by reaction of  $\text{SOCl}_2$  on III in ether. N-(Butyl)- $\alpha$ -eleostearamide (IV), m.  $81.5-2.5^\circ$ , was prepd. by reaction of I on  $\text{BuNH}_2$  in ether. Similarly was prepd. N,N-diethyl- $\alpha$ -eleostearamide, b  $0.6-132^\circ$ . N-Butyl- $\alpha$ -eleostearylamine, decomp.  $95^\circ$ , was prepd. from IV by the method of Micovic and Mihailovic (CA 48: 10020g). trans-10,trans-12,trans-14-Nonadecatrien-2-one, m.  $56-6.5^\circ$ , was developed from  $\alpha$ -eleostearic acid with  $\text{MeLi}$ .  $\alpha$ -Eleostearyl alc., m.  $56-8^\circ$ , was prepd. by the method of Ligthelm, et al. (CA 45: 6151h) and was converted to  $\alpha$ -eleostearylphenyl- **urethane**, m.  $79-80^\circ$ , by reaction with phenyl isocyanate. Details on reaction environment and product stability are presented.

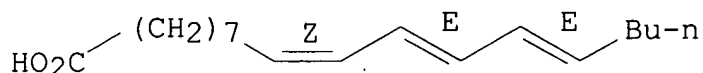
IT **506-23-0P**

(prepn. and reactions of)

RN 506-23-0 HCA

CN 9,11,13-Octadecatrienoic acid, (9Z,11E,13E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 23 (Aliphatic Compounds)

IT **506-23-0P**

(prepn. and reactions of)

L57 ANSWER 9 OF 9 HCA COPYRIGHT 2006 ACS on STN

65:57538 Original Reference No. 65:10756d-f Polymer dispersions in hydrocarbon oils by using graft-copolymer dispersing agents. Schmidle, Claude J.; Brown, George L. (Rohm & Haas Co.). US 3255135 **19660607**, 5 pp. (Unavailable). APPLICATION: US 19650205. PRIORITY: US 19650205.

AB Monomers are polymerized in org. liquids in which the polymer is

insol., and the polymer is produced as discrete particles in a dispersed condition in the polymerization medium. The graft-polymeric dispersing agent consists of 2 portions: a hydrocarbon-sol. polymer, such as an oxidized drying oil; and an ester of acrylic or methacrylic acid with a C1-18 alc. Thus, air is bubbled through 500 parts linseed oil and heated to 100° for 2 hrs. Then the temp. rose to 127-36° for 5 hrs., forming a product (I), the Gardner-Holdt viscosity of which rose from A to Z-3. I (5 parts) was dissolved in 75 parts com. octane, forming a soln. (II). To II, Bz2O2 0.1, Me methacrylate 22.5, and Et acrylate 22.5 parts were added and the mixt. refluxed for 4 hrs. to form a latex (III), 38% solids (consisting of 85% of a 50:50 copolymer of Me methacrylate and Et acrylate), particle size 0.1-9.5 $\mu$  and 15% graft copolymer (Me methacrylate and Et acrylate on oxidized linseed oil). A mixt. of 5 parts butyroxethyl acetate and 5 parts com. octane was added to the polymer dispersion, which then formed a H2O-resistant film on glass plates.

INCL 260023000

CC 48 (Plastics Technology)

IT Linseed oil

Safflower oil

**Tung oil**

(oxidized, **graft** polymers on, as dispersing agents in polymerization in hydrocarbons)

=> d 158 1-16 cbib abs hitstr hitind

L58 ANSWER 1 OF 16 HCA COPYRIGHT 2006 ACS on STN

140:254728 **Urethane** prepolymer composition with high flash point and sealing material. Fujii, Masato; Nishimura, Norio (Dainippon Ink and Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004091603 A2 20040325, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-253604 20020830.

AB The compn. contains a prepolymer made of tolylene diisocyanate (I) and poly(oxyalkylene) polyol, which has NCO content  $\leq 3.3\%$ , content of free I  $< 1\%$ , and  $\geq 2$  **terminal NCO**, and 0.1-10% (based on the prepolymer) of a drying oil and/or a semidrying oil. The sealing material is made of the prepolymer and a polyol. Thus, 95 parts of a prepolymer comprising polyoxypropylene diol (II) with no. av. mol. wt. (Mn) 1000 100, II with Mn 2000 243, polyoxypropylene triol with Mn 434, and I 101 g and 5 parts **tung oil** were mixed to give the prepolymer compn., 100 parts of which was mixed with 260 parts 179:40:80:2 mixt. of CaCO3 (Viscolite OS), dioctyl phthalate, II, and Pb octylate and molded to give a test piece showing tensile strength 78.5 N/cm<sup>2</sup>, 50% modulus 14.5 N/cm<sup>2</sup>, and elongation at break 924%.

IC ICM C08G018-30  
ICS C09K003-10  
CC 38-3 (Plastics Fabrication and Uses)  
ST **polyurethane** prepolymer high flash point; drying  
semidrying oil polyoxyalkylene **polyurethane** prepolymer;  
tolylene diisocyanate polyoxypropylene copolymer prepolymer;  
**tung oil polyurethane** prepolymer sealing  
material  
IT Fats and Glyceridic oils, uses  
(drying; **polyurethane** prepolymer compn. contg.  
(semi)drying oil with high flash point for sealing material)  
IT **Polyurethanes**, uses  
(polyoxyalkylene-; **polyurethane** prepolymer compn.  
contg. (semi)drying oil with high flash point for sealing  
material)  
IT Fire-resistant materials  
Sealing compositions  
(**polyurethane** prepolymer compn. contg. (semi)drying oil  
with high flash point for sealing material)  
IT Rape oil  
**Tung oil**  
(**polyurethane** prepolymer compn. contg. (semi)drying oil  
with high flash point for sealing material)  
IT Polyoxyalkylenes, uses  
(triol, polymer with tolylene diisocyanate; **polyurethane**  
prepolymer compn. contg. (semi)drying oil with high flash point  
for sealing material)  
IT 25322-69-4DP, triol, polymer with tolylene diisocyanate  
26471-62-5DP, Tolylene diisocyanate, polymer with polyoxypropylene  
triol  
(**polyurethane** prepolymer compn. contg. (semi)drying oil  
with high flash point for sealing material)

L58 ANSWER 2 OF 16 HCA COPYRIGHT 2006 ACS on STN

134:368331 Self-crosslinkable polyurethanes, polyurethane-based graft  
copolymers and their use in coatings, adhesives and sealants.  
Schwarte, Stephan; Wegner, Egon; Angermueller, Harald (BASF Coatings  
A.-G., Germany). PCT Int. Appl. WO 2001034674 A1 **20010517**  
, 89 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB,  
BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ,  
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT,  
BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR,  
IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (German).  
CODEN: PIXXD2. APPLICATION: WO 2000-EP9849 20001009. PRIORITY: DE  
1999-19953445 19991106.

- AB A self-crosslinkable polyurethane (B) comprising side-chain and/or terminal ethenylarylene groups, useful for sealants, adhesives and, in combination with powder-slurry clear lacquers, for producing special-effect multilayer coatings, was manufd. by reacting a polyurethane **prepolymer** (B1) contg.  $\geq 1$  free and  $\geq 1$  blocked isocyanate groups with an adduct (B2) comprising  $\geq 1$  group reactive with isocyanate group. The adduct B2 is prepd. by reacting an ethenylarylene monoisocyanate with  $\geq 1$  polyol, polyamine and/or an OH- or H<sub>2</sub>N-contg. compd. A self-crosslinkable graft copolymer, contg.  $\geq 1$  (meth)acrylate copolymer (A) and  $\geq 1$  polyurethane (B), which can be produced by dispersing polyurethane (B) in an aq. medium and subsequently by the radical copolymer. in emulsion of a mixt. consisting of a monomer (a1) comprising  $\geq 1$  functional group which is reactive with isocyanate, and a copolymerizable monomer (a2) is also claimed. For example, an adduct B2 was prepd. by reaction of diethanolamine with 1-(1-isocyanato-1-methylethyl)-3-(1-methylethenyl)benzene in MEK-NMP mixt. at  $\leq 40^\circ$  until no free NCO groups were present. A polyester polyol prepd. from Pripol 1013, isophthalic acid and 1,6-hexanediol was heated at  $80^\circ$  in MEK-NMP with an isophorone diisocyanate-Me Et ketoxime adduct (prepn. given) until the NCO content was 0.65-0.8% to give **prepolymer** B1. This was combined with the adduct B2 and the mixt. heated at  $70^\circ$  until the NCO content was 0.18-0.25%, Me Et ketoxime was added and the whole stirred at  $70^\circ$  until no free NCO groups were present to give polyurethane B soln. which was treated with methoxypropanol, Et<sub>3</sub>N and H<sub>2</sub>O and the solvents were removed by distn. to give aq. polyurethane graft copolymer dispersion that was processed into a coating.
- IC ICM C08G018-67  
ICS C08G018-08; C08G018-80; C08F290-06; C09D175-14
- CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 35
- ST isopropenylcumyl isocyanate acrylic graft polyester polyurethane manuf. dispersion coating; isophorone diisocyanate acrylic graft polyester polyurethane manuf. dispersion coating; **fatty acid** dimer acrylic **graft** polyester polyurethane manuf.; acrylic graft polyester polyurethane water thinned self crosslinking coating
- IT 80-62-6DP, Methyl methacrylate, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
96-29-7DP, Methyl ethyl ketoxime, adducts with isocyanates  
97-88-1DP, Butyl methacrylate, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
868-77-9DP, 2-Hydroxyethyl methacrylate, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
(self-crosslinkable polyurethanes, polyurethane-based graft

copolymers and their use in coatings, adhesives and sealants)  
 IT 111-42-2DP, Diethanolamine, **fatty acid**  
 dimer-contg. **graft** acrylic-polyester-polyurethanes  
 121-91-5DP, Isophthalic **acid, fatty acid**  
 dimer-contg. **graft** acrylic-polyester-polyurethanes  
 629-11-8DP, 1,6-Hexanediol, **fatty acid**  
 dimer-contg. **graft** acrylic-polyester-polyurethanes  
 2094-99-7DP, Benzene, 1-(1-isocyanato-1-methylethyl)-3-(1-methylethenyl)-, **fatty acid** dimer-contg.  
**graft** acrylic-polyester-polyurethanes 4098-71-9DP,  
 Isophorone diisocyanate, **fatty acid** dimer-contg.  
**graft** acrylic-polyester-polyurethanes 4767-03-7DP,  
 Dimethylolpropionic **acid, fatty acid**  
 dimer-contg. **graft** acrylic-polyester-polyurethanes  
 (self-crosslinkable polyurethanes, polyurethane-based graft  
 copolymers and their use in coatings, adhesives and sealants)

L58 ANSWER 3 OF 16 HCA COPYRIGHT 2006 ACS on STN

134:367389 Manufacture of polyurethanes and polyurethane-based graft  
 copolymers and their use for coatings, adhesives and sealants.  
 Figger, Hans-Juergen (BASF Coatings A.-G., Germany). PCT Int. Appl.  
 WO 2001034672 A1 **20010517**, 48 pp. DESIGNATED STATES: W:  
 AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR,  
 CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID,  
 IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
 MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
 SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM,  
 CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL,  
 PT, SE, SN, TD, TG. (German). CODEN: PIXXD2. APPLICATION: WO  
 2000-EP9848 20001009. PRIORITY: DE 1999-19953446 19991106.

AB Olefinically unsatd., hydrophilic or hydrophobic polyurethanes (B)  
 are manufd. by (1) reacting a polyurethane **prepolymer**  
 (B1), produced by reacting a polyisocyanate with an (un)satd. high-  
 or low-mol.-wt. polyol in  $\geq 1$  stages so that, according to the  
 statistical mean,  $\geq 1$  free isocyanate group per mol. still  
 remains, (2) reacting the products with a compd. contg.  $\geq 2$   
 functional groups which are reactive to isocyanate, in such a way  
 that no remaining free isocyanate groups are detectable, and (3)  
 subjecting the resulting polyurethane to reaction with an  
 $\alpha, \beta$ -unsatd. carboxylic acid anhydride. Thus, a  
 polyurethane **prepolymer** was prepd. by heating Pripol 1013,  
 isophthalic acid, 1,6-hexanediol, neopentyl glycol,  
 dimethylolpropionic acid and Desmodur W at  $86^\circ$  in MeCOEt  
 until the concn. of NCO groups remained const. Trimethylolpropane  
 was added to the **prepolymer**, the whole was kept at  
 $82^\circ$  in MeCOEt until the NCO content was  $< 0.25\%$ , methacrylic  
 acid anhydride was added, the mixt. was heated for 2 h at

82°, dild. with Bu diglycol, partially neutralized with dimethylethanolamine, dild. with H<sub>2</sub>O and the solvents were removed by distn. to give a polyurethane dispersion. This was combined with Me methacrylate, Bu methacrylate, hydroxyethyl methacrylate and methacrylic acid, the mixt. was neutralized with dimethylethanolamine, the grafting reaction carried out at 80-85° in the presence of BuCH<sub>2</sub>EtCO<sub>2</sub>OCMe<sub>3</sub> initiator and the product dild. with H<sub>2</sub>O and Bu diglycol to give a title graft copolymer which, when coated on glass and dried overnight, gave a clear, hard film.

- IC ICM C08G018-08  
ICS C08G018-63; C08F283-00; C09D175-14
- CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 42
- ST methylenedicyclohexyl diisocyanate acrylic graft polyester polyurethane manuf dispersion coating; cyclohexylmethane diisocyanate acrylic graft polyester polyurethane manuf dispersion coating; **fatty acid** dimer acrylic **graft** polyester polyurethane manuf; acrylic graft polyester polyurethane water thinned self crosslinking coating
- IT 77-99-6DP, Trimethylolpropane, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
79-41-4DP, Methacrylic **acid**, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
80-62-6DP, Methyl methacrylate, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
121-91-5DP, Isophthalic **acid**, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
126-30-7DP, Neopentyl glycol, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
141-32-2DP, Butyl acrylate, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
629-11-8DP, 1,6-Hexanediol, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
760-93-0DP, Methacrylic anhydride, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
923-26-2DP, 2-Hydroxypropyl methacrylate, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
4767-03-7DP, Dimethylolpropionic **acid**, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
79103-62-1DP, Desmodur W, **fatty acid** dimer-contg. **graft** acrylic-polyester-polyurethanes  
(manuf. of polyurethanes and polyurethane-based graft copolymers and their use for coatings, adhesives and sealants)

resistance. Akagi, Etsuko; Watabe, Takashi; Kondo, Satoshi; Hayashi, Tomomi; Ogawa, Hajime; Funaki, Takashi (Asahi Glass Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001081329 A2

**20010327**, 26 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-255988 19990909.

AB The compns. contain (A) org. polymers contg.  $\geq 1$  crosslinkable hydrolyzable silyl group, (B) fluoropolymers contg. (p) polyfluorohydrocarbon units, (q) photocurable functional group-contg. units, and optionally (r) other units, (C) air-curable compds., and optionally (D) polyfluorohydrocarbon group-contg. (meth)acryloyl monomers and/or oligomers. Thus, a compn. contg. (A) 100 parts polymer prepd. from polypropylene glycol glycerin ether, allyl chloride, and methyldimethoxysilane, (B) 5 parts polymer prepd. from Bu acrylate, 2-hydroxyethyl acrylate,  $C_nF_{2n+1}CH_2CH_2OCOCH:CH_2$  (av. value of  $n = 9$ ), and 2-isocyanatoethyl methacrylate, (C) 3 parts **tung oil**, and silane compds. (KBM 1003 and KBM 602) and Sn compds. was cured to give a crosslinked sheet.

IC ICM C08L101-10

ICS C08L027-12; C08L071-02

CC 37-6 (Plastics Manufacture and Processing)

ST soiling weather resistance **tung oil** sheet; polypropylene glycol glycerin hydrolyzable silyl group; acrylic fluoropolymer polyoxypropylene silyl compn

IT **Polyurethanes**, preparation

(acrylic, fluorine-contg.; curable compns. with good soiling and weather resistance)

IT Fluoropolymers, preparation

(acrylic-**polyurethane**-; curable compns. with good soiling and weather resistance)

IT Linseed oil

**Tung oil**

(curable compns. with good soiling and weather resistance)

IT Butadiene rubber, properties

(**hydroxy-terminated**; curable compns. with good soiling and weather resistance)

IT 9003-17-2

(butadiene rubber, **hydroxy-terminated**; curable compns. with good soiling and weather resistance)

L58 ANSWER 5 OF 16 HCA COPYRIGHT 2006 ACS on STN

132:335399 Room-temperature curable compositions with good curability and weather resistance. Doi, Takao; Watanabe, Takashi; Onoguchi, Tatsuo; Hayashi, Tomomi (Asahi Glass Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000136313 A2 **20000516**, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-313557 19981104.

AB The compns., useful for sealants, etc., comprise polymers contg. hydrolyzable silane group  $SiXaR_{13-a}$  [ $R_1 = Cl-20-(un)$ substituted

monovalent org. group; X = OH, hydrolyzable group; a = 1-3], air-curable compds., and/or photocurable compds., where a part or all of the polymers contain SiX<sub>3</sub> group. Thus, 100 parts trimethoxysilyl-terminated polypropylene oxide was mixed with 5 parts **tung oil**, 3 parts Aronix M 309 (trimethylolpropane triacrylate), curing catalysts, and other additives to give a compn., showing good curability and weather resistance for 750 h.

- IC ICM C08L101-10  
ICS C08L065-00
- CC 37-6 (Plastics Manufacture and Processing)
- ST room temp curable compn hydrolyzable silane; methoxysilyl polyoxypropylene air curable compd curability; **tung oil** blend moisture curable polyoxyalkylene; photocurable compd blend sealant weather resistance
- IT **Tung oil**  
(crosslinked; room-temp. curable compns. with good curability and weather resistance)
- IT Butadiene rubber, preparation  
(**hydroxy-terminated**, Poly bd-R 15HT; room-temp. curable compns. with good curability and weather resistance)
- IT **Polyurethanes**, preparation  
(modified oil, crosslinked; room-temp. curable compns. with good curability and weather resistance)
- IT **Tung oil**  
(polymd., crosslinked; room-temp. curable compns. with good curability and weather resistance)
- IT 9003-17-2P  
(butadiene rubber, **hydroxy-terminated**, Poly bd-R 15HT; room-temp. curable compns. with good curability and weather resistance)
- IT 75-54-7DP, Methylchlorosilane, reaction products with polyisobutylene, methoxylated 107-05-1DP, Allyl chloride, reaction products with polypropylene glycol ethers and trimethoxysilane 998-30-1DP, Triethoxysilane, reaction products with polypropylene glycol ethers and allyl chloride 2487-90-3DP, Trimethoxysilane, reaction products with polypropylene glycol ethers and allyl chloride 4420-74-0DP, 3-Mercaptopropyltrimethoxysilane, reaction products with polypropylene glycol ethers and allyl chloride 9003-17-2DP, Polybutadiene, hydrogenated, **hydroxy-terminated**, reaction products with isocyanatopropylmethoxysilanes 9003-27-4DP, Polyisobutylene, isopropenyl-terminated, reaction products with chlorosilanes, methoxylated 9003-54-7P, Acrylonitrile-styrene copolymer 10025-78-2DP, Trichlorosilane, reaction products with polyisobutylene, methoxylated 15396-00-6DP, 3-Isocyanatopropyltrimethoxysilane, reaction products with



hydrogenated polybutadiene 15396-00-6DP,  $\gamma$ -Isocyanatopropyltrimethoxysilane, reaction products with polypropylene glycol ethers 16881-77-9DP, Methyltrimethoxysilane, reaction products with polypropylene glycol ethers and allyl chloride 25322-69-4DP, Polypropylene glycol, reaction products with allyl chloride and trimethoxysilane 25791-96-2DP, Polypropylene glycol ether with glycerin, reaction products with allyl chloride and alkoxysilane 52625-13-5DP, Polypropylene glycol sorbitol ether, reaction products with allyl chloride and trimethoxysilane 88507-04-4DP, Polytail HA, reaction products with isocyanatopropylmethoxysilanes 263013-30-5P 263013-31-6P (room-temp. curable compns. with good curability and weather resistance)

L58 ANSWER 6 OF 16 HCA COPYRIGHT 2006 ACS on STN

131:171305 Moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise. Harada, Kuniji; Arisawa, Akizo; Sato, Shinichi (Konishi K. K., Japan). Jpn. Kokai Tokkyo Koho JP 11228934 A2 **19990824** Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-54460 19980218.

AB The adhesive comprise 100 parts **isocyanate-terminated urethane** prepolymers (NCO content 1-10%) derived from reaction of isocyanates with polyols with no. av. mol. wt. (Mn) 2000-15,000 and 0.5-10 parts drying **oils** selected from **tung oil**, linseed **oil**, and dehydrated castor oil. Heating 100 parts SBU 0319 (polyoxypropylene polyol, Mn 4000) with 25 parts MDI (Sumidur 44S) at 90° for 3 h and mixing the resulting prepolymer (NCO content 5%) 100, **tung oil** 3, NS400 120, silica (RY200) 5, and PhMe 10 parts gave an adhesive showing suppression of tacking and crack sound.

IC ICM C09J175-04

ICS C08G018-10

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 43

ST moisture curable **polyurethane** adhesive wooden flooring; polyoxypropylene polyol MDI prepolymer adhesive; **tung oil polyurethane** adhesive flooring noise

IT Castor oil

(dehydrated; moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise)

IT Fats and Glyceridic oils, uses

(drying; moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise)

IT Floor coverings

(moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise)

IT **Polyurethanes**, uses

- (moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise)
- IT Linseed oil
- Tung oil**  
(moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise)
- IT Adhesives  
(moisture-curable; moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise)
- IT 25766-14-7P, SBU 0319-MDI copolymer 76755-68-5P, SBU 0319-MDI-crude MDI copolymer 239125-23-6P, SBU 0319-Sumidur 44S copolymer 239125-24-7P, SBU 0319-Sumidur 44S-Sumidur 44V20 copolymer 239125-25-8P, SBU 0319-Premiol 4002-Sumidur 44S copolymer 239125-27-0P, SBU 0319-Premiol 4002-MDI copolymer  
(moisture-curable **polyurethane** adhesives for wooden flooring for reducing unpleasant noise)
- L58 ANSWER 7 OF 16 HCA COPYRIGHT 2006 ACS on STN
- 130:238523 Polyurethanes, their manufacture, and transmission belts using polyurethane compositions having low noise and low friction coefficient. Takeuchi, Yuji (Bando Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11051122 A2 **19990223** Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-208743 19970804.
- AB The polyurethanes have urethane bond-contg. main **chains** having polyester **side chains** comprising **stearic acid** or **oleic acid** as acid components. The polyurethanes are manufd. by adding OH- or amino-contg. stearic acid- or oleic acid-based esters and curing agents to urethane **prepolymers** and heat curing. Thus, 100 parts a urethane **prepolymer** was mixed with methylene bis(o-chloroaniline) 15, DOP 30, and Unigly GO 102S (polyglycerin oleate) 10 parts, heated, and cured in a mold to give a product showing friction coeff. 0.4, high wear resistance, low noise, and no change of the properties after 144 h at 80°.
- IC ICM F16G001-14  
ICS C08G018-10; C08G018-36
- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 35
- IT 9007-48-1DP, Polyglycerin oleate, reaction products with urethane **prepolymer** and methylene bischloroaniline  
(Unigly GO 102S; polyurethanes having ester side chains for wear-resistant transmission belts)
- IT 101-14-4DP, polymers with urethane **prepolymer**, reaction product with polyglycerin oleate  
(polyurethanes having ester side chains for wear-resistant transmission belts)

- L58 ANSWER 8 OF 16 HCA COPYRIGHT 2006 ACS on STN  
117:235634 Liquid polymer compositions. Okamoto, Kohei; Shiraki, Yoshiro; Tanaka, Toshihiro (Idemitsu Petrochemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04173827 A2 **19920622** Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-299751 19901107.
- AB The title compns. providing cured products with excellent water, heat, and weather resistance, rubbery elasticity, elec. properties, and transparency comprise OH group-contg. liq. isoprene polymer hydrogenation products, polyisocyanates, and castor oil ester-exchange products. A compn. from hydrogenated liq. polyisoprene (no.-av. mol. wt. 2240, 2.15 OH groups/mol.) 100, IPDI 29.9, castor oil-rape seed oil ester-exchange product (OH value 2.78 mequiv/g) 50, and dibutyltin dilaurate 0.05 part gave a heat-, weather-, and water-resistant cured product with transparency 88%, vol. resistivity  $2.1 \times 10^{15} \Omega\text{-cm}$ , and elongation 410%.
- IC ICM C08G018-69  
ICS C08G018-08
- CC 39-9 (Synthetic Elastomers and Natural Rubber)
- ST isoprene **urethane** rubber heat resistant; weather resistant  
isoprene **urethane** rubber; water resistant isoprene **urethane** rubber; castor oil isoprene **urethane** rubber
- IT Coconut oil  
Cod-liver oil  
Cottonseed oil  
Linseed oil  
Olive oil  
Palm oil  
Peanut oil  
Rape oil  
Soybean oil  
**Tung oil**  
(ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)
- IT Castor oil  
(ester-exchange products with other oils, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)
- IT Fats and Glyceridic oils  
(fish, ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)
- IT Water-resistant materials  
(heat-resistant, castor oil-modified hydrogenated isoprene-**urethane** rubbers, manuf. of, weather-resistant)
- IT Tallow

(oil, ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)

IT Lard

(oil, ester-exchange products with castor, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)

IT Fats and Glyceridic oils

(perilla, ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)

IT Rubber, **urethane**, preparation

(polyisoprene-based, **hydroxy-terminated**, hydrogenated, manuf. of, castor oil-modified, heat- and water- and weather-resistant)

IT Fats and Glyceridic oils

(rice bran, ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)

IT Fats and Glyceridic oils

(teaseed, ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)

IT Fats and Glyceridic oils

(walnut, ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)

IT Heat-resistant materials

(water-resistant, castor oil-modified hydrogenated isoprene-**urethane** rubbers, manuf. of, weather-resistant)

IT Fats and Glyceridic oils

(whale, ester-exchange products with castor oil, hydrogenated isoprene-**urethane** rubbers from, heat- and water- and weather-resistant)

IT 4098-71-9DP, IPDI, castor oil-modified hydrogenated polyisoprene-**polyurethane** derivs. 75138-76-0DP, Takenate 600, castor

oil-modified hydrogenated polyisoprene-**polyurethane** derivs. 79103-62-1DP, Desmodur W, castor oil-modified hydrogenated polyisoprene-**polyurethane** derivs.

(rubber, manuf. of, heat- and water- and weather-resistant)

L58 ANSWER 9 OF 16 HCA COPYRIGHT 2006 ACS on STN

113:154169 Decreasing the tackiness of **urethane** rubbers by addition of drying oils. Samezawa, Hiroshi (Daiichi Kogyo Seiyaku Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02069559 A2 **19900308** Heisei, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-222023 19880905.

AB **Urethane** rubber compns. useful for sealants which cure

leaving nontacky exposed surfaces are prepd. by adding 0.1-5% drying oils to mixts. of **NCO-terminated urethane** prepolymers, active H-contg. compds., plasticizers, catalysts, defoamers, and fillers. Thus, a rubber prepd. from Polyflex WP 370 (**urethane** prepolymer) 100, Curamine MT (diamine) 8, Polyhardener T 500 (polyol) 30, DOP 30, CaCO<sub>3</sub> 127, Pb compd. catalyst 5, and **tung oil** 6 parts was tack free after 3 days at 20°, and showed tensile strength 35 kg/cm<sup>2</sup>, vs. 34 kg/cm<sup>2</sup> for a rubber prepd. similarly without the **tung oil**, whose surfaces remained tacky.

IC ICM C08L075-04

ICS C08K005-01

CC 39-15 (Synthetic Elastomers and Natural Rubber)

Section cross-reference(s): 42, 45

ST **urethane** rubber tack prevention oil; sealant nontacky

**urethane** rubber; drying oil **polyurethane** blocking inhibitor

IT Rubber, **urethane**, uses and miscellaneous

(sealants, contg. drying oils for nontacky surfaces)

IT **Tung oil**

(**urethane** rubbers contg., for nontackiness)

IT Oils, glyceridic

(drying, **urethane** rubbers contg., for sealants with nontacky surfaces)

IT Sealing compositions

(elastic, **polyurethane**, contg. drying oils, with nontacky surfaces)

IT Parting materials

(internal, drying oils, **urethane** rubber sealants contg., for tack-free surfaces)

IT 129699-17-8P

(prepn. of, rubber, contg. **tung oil**, for sealants with nontacky surfaces)

L58 ANSWER 10 OF 16 HCA COPYRIGHT 2006 ACS on STN

111:196858 Epoxy ester urethane polymers grafted with acrylic monomers for use in primers for metals. Huybrechts, Jozef Theresia; Vleminckx, Victor Roger (du Pont de Nemours, E. I., and Co., USA). PCT Int. Appl. WO 8905316 A1 **19890615**, 17 pp. DESIGNATED STATES: W: JP; RW: BE, DE, FR, GB, IT, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1987-US3224 19871210.

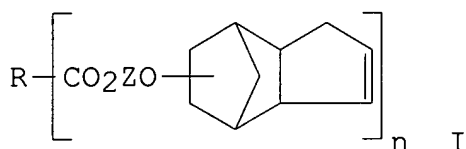
AB The title polymers are prepd. and used in aq. primer dispersions which contain ≤10% volatile org. solvents and amines and give coatings (crosslinkable at 140-200°) on metals which are suitable for topcoating to give coatings with good hardness, flexibility, and resistance to corrosion and chipping. An epoxy ester urethane **prepolymer** was prepd. from neopentyl glycol, OCN(CH<sub>2</sub>)<sub>6</sub>NCO, succinic anhydride, Epon 1001, and

dimethylolpropionic acid and grafted with a mixt. of styrene, Me methacrylate, Bu acrylate, hydroxyethyl acrylate, and acrylic acid to give a graft copolymer which was used with Cymel 303 in the prepn. of an aq. primer compn.

- IC ICM C08F283-00  
ICS C08F285-00; C08K003-20; C08L051-08  
CC 42-7 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 55, 56  
IT 79-10-7D, 2-Propenoic acid, graft polymers 80-05-7D, graft polymers 80-62-6D, graft polymers 100-42-5D, graft polymers 106-89-8D, graft polymers 108-30-5D, graft polymers 126-30-7D, graft polymers 556-52-5D, Oxiranemethanol, esters with branched **fatty acids**, graft polymers 822-06-0D, graft polymers 4767-03-7D, graft polymers 123565-02-6 (primers contg., aq., for chip-resistant coatings)

L58 ANSWER 11 OF 16 HCA COPYRIGHT 2006 ACS on STN  
95:63875 Autoxidizable compositions. Emmons, William D.; Nyi, Kayson (Rohm and Haas Co., USA). U.S. US 4261872 **19810414**, 18 pp. Cont.-in-part of U.S. 4,145,503. (English). CODEN: USXXAM. APPLICATION: US 1978-908427 19780522.

GI



- AB Dicyclopentadiene derivs. (I, R = hydrocarbon residue from unsatd. monoacids or diacids; n = 1,2; Z = C2-6 alkylene or C4-12 oxyalkylene) are manufd. and used with a drier, a film-forming polymer, and a volatile stabilizer to prep. autoxidizable high-solids coatings and(or) impregnating compns. Thus, reaction of ethylene glycol [107-21-1] with dicyclopentadiene [77-73-6] in the presence of BF<sub>3</sub>.Et<sub>2</sub>O gave ethylene glycol monodicyclopentenyl ether [64998-38-5], which was esterified with methacrylic acid to give I (R = CH<sub>2</sub>:CHMe, Z = CH<sub>2</sub>CH<sub>2</sub>, n = 1) (II) [68169-03-9]. A long oil alkyd (dehydrated castor oil 55, phthalic anhydride 32, and glycerol 17%, 50% solids in mineral thinner) was dild. with an equal wt. (based on solids) of II. The mixt. was pigmented at a 60:40 binder-TiO<sub>2</sub> ratio and mixed with 0.2% (based on binder) Co as Co naphthanate and 0.5% (based on binder) butyraldehyde oxime to give a 77 wt.% solids compn. with viscosity 241 cP and solids 62.8 vol. %, which gave, on panels, a coating with pencil hardness F, mandrel

flexibility 0.5-1 in. diam. pass, and hot (165° F, 100 h) alkali (Tide) resistance rating 5 (on a scale where 0 represents total failure and 5 represent no effect), compared with 677 cP, 38.3 vol. %, B, 0.125 in., and 0, resp., for a similar coating not contg. II and having solids content 56% after diln. with 20 parts PhMe.

IC C08L091-00; C08F036-00; C08K005-16; C08L075-00

INCL 260022000CB

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 24, 55, 56

IT **Urethane** polymers, compounds

(acrylated, coatings, air-drying, reactive diluents for, dicyclopentenylloxyethyl methacrylate as)

IT Castor oil

**Tung oil**

(amide, acrylated, polymers with acrylic monomers, coatings, reactive diluents for, dicyclopentenylloxyethyl (meth)acrylate as)

IT Rubber, butadiene, uses and miscellaneous

Rubber, butadiene-styrene, uses and miscellaneous

Rubber, nitrile, uses and miscellaneous

(**hydroxy-terminated**, coatings, air-drying,

reactive diluent for, dicyclopentenylloxyethyl (meth)acrylate as)

IT 79-10-7D, polymers with Bu acrylate, Me methacrylate, and acrylated dehydrated castor **oil** and **tung oil**

amides 80-62-6D, polymers with Bu acrylate, acrylic acid, and acrylated dehydrated castor and **tung oil** amides

141-32-2D, polymers with acrylated dehydrated castor **oil**

and **tung oil** amides, Me methacrylate, and

acrylic acid 9003-53-6 25086-48-0 53814-24-7

(coatings, air-drying, reactive diluents for,

dicyclopentenylloxyethyl (meth)acrylate as)

L58 ANSWER 12 OF 16 HCA COPYRIGHT 2006 ACS on STN

90:187639 Process for producing shock-proof graft copolymers of styrene with synthetic rubber. Ballova, G. D.; Ivanchev, S. S.; Romantsova, O. N.; Maladzyanova, L. F.; Egorova, E. I.; Karmakova, V. G.; Potiforova, M. P.; Trushkiva, L. N. (USSR). Brit. GB 1523104 **19780831**, 6 pp. (English). CODEN: BRXXAA. APPLICATION: GB 1977-11081 19770316.

AB The title copolymers were manufd. by dissolving the rubber in styrene at  $\leq 75^\circ$ , **prepolymg.** the soln. at

$75-85^\circ$  in the presence of a plasticizer and a mixed C3-C12

aliph. fatty acid diacylated peroxide initiator to 25-40% styrene conversion, and heating the **prepolymer** to

$\leq 140^\circ$  in aq. suspension in the presence of  $\geq 1$

peroxide polymn. catalyst and a stabilizing system contg. 0.15-1.5%

Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, 0.003-0.02% mixed disubstituted Na C8-C18-alkyl sulfates,

and 0.15-0.35% CaCO<sub>3</sub>. Thus, 143.37 parts styrene and 7.75 parts

butadiene rubber were mixed 2-3 h at  $70-5^\circ$ , 3.1 parts

plasticizer was added, and **prepolymn.** was carried out during 5 h at 75-85° in the presence of 0.23 parts aliph. acid diacylated peroxides (C3-5 2, C6-9 89, C10-12 9%) until the Fordwick viscosity was 41 s. The **prepolymer** was mixed with Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> 0.6, disubstituted Na alkylsulfate 0.003, and CaCO<sub>3</sub> 0.15 parts in 99.247 parts H<sub>2</sub>O, and 0.36 parts peroxide compn. and 0.19 parts tert-Bu perbenzoate were added. The mixt. was heated during 5 h to 130° under N and heated 2 h at 130 ° to give a butadiene-styrene graft copolymer [9003-55-8] with good phys. and mech. properties.

IC C08F004-38

CC 35-6 (Synthetic High Polymers)

IT Polymerization catalysts  
(**graft**, C3-12 **aliph. fatty acid** diacyl peroxides, for styrene on synthetic rubbers)

L58 ANSWER 13 OF 16 HCA COPYRIGHT 2006 ACS on STN

89:130396 Transparent impact-resistant graft copolymer. Kudryavtseva, T. V.; Ivanchev, S. S.; Egorova, E. I.; Romantsova, O. N.; Eremina, E. N.; Shamina, V. P.; Mazova, L. G. (USSR). U.S.S.R. SU 615093 **19780715** From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1978, 55(26), 80. (Russian). CODEN: URXXAF. APPLICATION: SU 1975-2140319 19750603.

AB The title colorless polymer with improved casting properties was prepd. by **prepolymn.** of a rubber soln. with a mixt. of styrene and Me methacrylate to 15-20% conversion in presence of a peroxide prepd. from a mixt. of C3-12 synthetic fatty acids and by subsequent polymn. in aq. suspension of the **prepolymer**.

IC C08F279-06

CC 36-3 (Plastics Manufacture and Processing)

IT Peroxides, uses and miscellaneous  
(**fatty acids**, catalysts, for **graft** copolymn. of styrene and Me methacrylate with rubber)

IT Polymerization catalysts  
(**graft**, **fatty acid** peroxides, for styrene and Me methacrylate with rubber)

L58 ANSWER 14 OF 16 HCA COPYRIGHT 2006 ACS on STN

82:141047 Dinitrileoxides as polymer additives. Crosby, John; Rennie, Robert A. C.; Tanner, John; Paton, Robert M. (Imperial Chemical Industries Ltd.). Ger. Offen. DE 2422764 **19741128**, 52 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1974-2422764 19740510.

GI For diagram(s), see printed CA Issue.

AB Alicyclic furoxans are useful as crosslinking agents for polymers, giving, on heating, dinitrile oxides which undergo 1,3-addn. with functional groups. Thus, refluxing 10 g 2-norbornene pseudonitrosite [54633-22-6] in 500 ml dioxane 2 hr gives 3.7 g 3-nitro-2-norbornanone oxime [54633-23-7], refluxing 4.9 mmole of



which with 4 mmole PhCH<sub>2</sub>Cl [100-44-7] and 4 mmole NaOEt in 9 ml EtOH 2 hr gives furoxan (I) [54573-22-7]. Heating 8 parts **OH-terminated** polybutadiene [9003-17-2] (mol. wt. 3200) contg. 1 part I 15 min at 80-110° gives a tacky, rubbery compn.

IC C08C; C08F

CC 36-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 28

IT Siloxanes and Silicones, uses and miscellaneous

**Tung oil**

(crosslinking agents, for furoxans as)

IT Rubber, natural, uses and miscellaneous

Rubber, **urethane**, uses and miscellaneous

(vulcanizing agents for, furoxans as)

IT 1,3-Butadiene; homopolymer, **hydroxyl-terminated**

(crosslinking agents for, furoxans as)

L58 ANSWER 15 OF 16 HCA COPYRIGHT 2006 ACS on STN

71:13840 Polymer emulsions. (Imperial Chemical Industries Ltd.). Fr. FR 1543838 **19681025**, 9 pp. (French). CODEN: FRXXAK.

PRIORITY: GB 19661109 - 19671030 19671030.

AB Emulsifying agents for prepg. stable emulsions of monomers, polymers, plasticizers, and other org. compds. in aliphatic hydrocarbons or water are described. A 1:49 methacrylic acid (Ia)-Me methacrylate (Ib) copolymer (I) (mol. wt. 30,000), having an av. of 20 **side chains** of poly(**stearic acid**) contg. 12 OH groups and having mol. wt. 1500, is mixed with an aliphatic hydrocarbon (b. 70-120°) as an emulsifying agent for bis(β-ethoxyethyl) phthalate (II), an epoxy resin, hexakis(methoxymethyl)melamine, a mixt. of II and a maleic anhydride-vinyl acetate-vinyl chloride copolymer, or a mixt. of an epoxy resin and bitumen. When these compds. and polymers are mixed with the solvent, stable dispersions are obtained. Similarly, a 3:18:20 glycidyl methacrylate (III)-styrene-vinyltoluene copolymer (mol. wt. 25,000) having an av. of 16 poly-(**stearic acid**) **side chains** (mol. wt. 1500) contg.

12 OH groups is used in an aliphatic hydrocarbon as an emulsifier for a polyester plasticizer prepd. by the condensation of adipic acid with hexyl-ene glycol and for a mixt. of AcOEt and an isocyanate **prepolymer** (Suprasec 3240) having free NCO groups. A 1:4 acrylic acid-vinylpyrrolidinone copolymer (mol. wt. 30,000) having an av. of 20 poly(**stearic acid**) **side chains** (mol. wt. 1500) contg. 12 OH groups is used as an emulsifier for glycerol in an aliphatic hydrocarbon. A graft copolymer prepd. by the reaction of Ib with the glycidyl groups of a 3:97 III-lauryl methacrylate (IV) copolymer is also used as an emulsifier for II in an aliphatic hydrocarbon. The reaction product of poly(ethylene glycol methacrylate) (mol. wt. 1200) contg. MeO end groups and a 1:49 I (mol. wt. 40,000) is used in water to

prep. stable aq. emulsions of ethylene dichloride, AcOEt, Ib, xylene, or an epoxy resin. Also, a graft copolymer of IV and poly(ethylene glycol methacrylate) is used as an emulsifier for prepn. of an aq. emulsion of an aliphatic hydrocarbon contg. an alkyd resin. Thus, I described above 13.3, II 133, and an aliphatic hydrocarbon (b. 70-90°) 200 parts were mixed to give a stable emulsion. When I was replaced with a 1:1 ketostearyl methacrylate-Ia copolymer, a stable dispersion of II was not obtained.

IC C08J

CC 36 (Plastics Manufacture and Processing)

IT Urethane polymers, preparation  
(emulsions of **prepolymers** for, contg. graft polymer emulsifiers)

L58 ANSWER 16 OF 16 HCA COPYRIGHT 2006 ACS on STN

70:58966 Use of dimorphotheca oil in coatings. Rheineck, Alfred E.; Sastry, G. M. (North Dakota State Univ., Fargo, ND, USA). Journal of Paint Technology, 41(528), 71-80 (English) **1969**. CODEN: JPTYAX. ISSN: 0094-8691.

AB Although the unusually long drying time of Dimorphotheca oil made it unsuitable for use as a drying oil, its drying characteristics were improved somewhat by adding small amts. of linseed oil or tert-Bu hydroperoxide. **Urethane** resins were prepd. by treating the oil with diisocyanates and then treating the **isocyanate-terminated** prepolymer with partial rosin esters. Alkyd resins were prepd. by treating the oil with excess glycerol followed by esterification with phthalic anhydride. The prepd. **polyurethanes** and alkyd resins were formulated into enamels and their performances were evaluated by accelerated weathering tests. The alkyd product compared favorably with a **tung oil** alkyd control. Comparison of exposure data indicated that the alkyd resin enamels were superior to the **urethane** enamels.

CC 42 (Coatings, Inks, and Related Products)

ST Dimorphotheca oil coatings; oil coatings Dimorphotheca; alkyd resins Dimorphotheca oil; **polyurethanes** Dimorphotheca oil

IT Coating materials  
(alkyd-**urethane** polymer, Dimorphotheca oils-modified)

=> d 159 1-19 cbib abs hitstr hitind

L59 ANSWER 1 OF 19 HCA COPYRIGHT 2006 ACS on STN

142:299559 Curable compositions and sealing compositions with good plasticizer migration resistance and thixotropy. Sakuma, Hideaki; Mochizuki, Yasushi; Sato, Koji (Auto Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005075894 A2 20050324, 15 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-306598 20030829.

- AB The compns. comprise NCO-contg. **urethane prepolymer**s, polyetherified sucrose with no reactive functional groups, and additives. Thus, polyoxypropylene glycol (Diol 3000) 332, polyoxypropylene triol (MN 4000) 66, and TDI (T 100) 44 g were allowed to react with dibutyltin dilaurate to give a **urethane prepolymer**, 100 g of which was blended with sucrose polyether (Sanphlex SPX 80) 70, Irganox 1010 2, CaCO<sub>3</sub> 50, TiO<sub>2</sub> 10, and 3-glycidoxypropyltrimethoxysilane (KBM 403) 0.5 g, further blended with fatty acid-coated CaCO<sub>3</sub> (Hakuenka CCR) 90, p-toluenesulfonyl isocyanate 1.5, dibutyltin dilaurate 0.2, and PhMe 13 g, and degassed to give a sealing compn. showing good extrudability from a cartridge, no slump, tack-free time ≤5 h, and good soil repellency after aging.
- IC ICM C08L075-04  
ICS C08G018-10; C08G065-28; C08K005-103; C08K005-1545; C08K009-04; C09K003-10; F16J015-14
- CC 42-11 (Coatings, Inks, and Related Products)
- ST plasticizer migration resistance sucrose polyether **polyurethane** sealant; thixotropic sealant **polyurethane** sucrose polyether blend
- IT **Polyurethanes**, uses  
(polyoxyalkylene-; **polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- IT Sealing compositions  
(**polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- IT **Tung oil**  
(**polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- IT Polyoxyalkylenes, uses  
(sucrose ethers, plasticizer; **polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- IT Plasticizers  
(sucrose polyethers; **polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- IT 471-34-1, Hakuenka CCR, uses  
(fatty acid-coated, thixotropic agent; **polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- IT 57-50-1D, Sucrose, polyethers 847833-50-5, Sanflex SPX 80  
(plasticizer; **polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- IT 25322-69-4DP, Polypropylene glycol, triol derivs., polymers with polypropylene glycol and TDI 115325-60-5P 847833-51-6P  
(**polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)

- IT 2530-83-8, KBM 403 6683-19-8, Irganox 1010 13463-67-7, Titanium oxide, uses  
(**polyurethane**-based sealing compns. with good plasticizer migration resistance and thixotropy)
- L59 ANSWER 2 OF 19 HCA COPYRIGHT 2006 ACS on STN  
141:262200 Curable compositions with good storage stability and initial curability for sealants, adhesives, and coatings. Kato, Hidetoshi; Hirose, Toru; Sakae, Kazuhisa (Toray Fine Chemicals Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004256569 A2 20040916, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-45537 20030224.
- AB The compns. comprise (a) polymers contg.  $\geq 2$  thiol groups, (b) compds. having  $\geq 2$  NCO groups, (c) In compds., and (d) organotin compds. Thus, a compn. contg. a polymer prepd. from polypropylene glycol, epichlorohydrin, and Thiokol LP 55 (polysulfide rubber), and crosslinking catalysts contg. Nacem Indium (indium acetylacetonate) and STANN BL (dibutyltin dilaurate) was mixed with **tung oil**-contg. polypropylene glycol-xylene diisocyanate **urethane prepolymer** and cured to give a sealant showing good tensile elongation after heating at 90°.
- IC ICM C08G018-52  
ICS C08G018-22
- CC 42-11 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 38
- IT Polysulfide rubber  
(Thiokol LP 55, reaction products with polypropylene glycol and **polyurethanes**; curable compns. with good storage stability and initial curability for sealants, adhesives, and coatings)
- IT **Polyurethanes**, uses  
(polyoxyalkylene-polysulfide-polythiourethane-; curable compns. with good storage stability and initial curability for sealants, adhesives, and coatings)
- IT Polysulfides  
(polyoxyalkylene-polythiourethane-**polyurethane**-; curable compns. with good storage stability and initial curability for sealants, adhesives, and coatings)
- IT Polyoxyalkylenes, uses  
(polysulfide-polythiourethane-**polyurethane**-; curable compns. with good storage stability and initial curability for sealants, adhesives, and coatings)
- IT **Polyurethanes**, uses  
(thio-, polyoxyalkylene-polysulfide-**polyurethane**-; curable compns. with good storage stability and initial curability for sealants, adhesives, and coatings)
- IT 106-89-8DP, Epichlorohydrin, reaction products with polypropylene glycol, polysulfide rubbers, and **polyurethanes**

25322-69-4DP, Polypropylene glycol, reaction products with epichlorohydrin, polysulfide rubbers, and **polyurethanes**  
54786-28-6DP, Polypropylene glycol-xylylene diisocyanate copolymer, polymers with SH-contg. polyoxyalkylene-polysulfides  
(curable compns. with good storage stability and initial curability for sealants, adhesives, and coatings)

L59 ANSWER 3 OF 19 HCA COPYRIGHT 2006 ACS on STN

138:322374 Curable polysulfide compositions and their tack-free sealing materials having resistance to water and heat. Takahashi, Toshifumi; Inosaka, Takeshi; Nanaumi, Tsutomu; Fuji, Rieko (Konishi Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003119382 A2 **20030423**, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-315596 20011012.

AB The compns. comprise polysulfide-polyethers, **urethane prepolymer**s, unsatd. compds. oxidizable with air, fatty acid esters, and inorg. fillers surface-treated with paraffins. Thus, a compn. contg. a polysulfide-polyether (Thiokol LP 282) 60, paraffin-treated Ca(HCO<sub>3</sub>)<sub>2</sub> (MC coat P 1) 50, **urethane prepolymer** manufd. from polypropylene glycol with xylene diisocyanate 40, **tung oil** 3, and ethylene glycol montanate 5.0 parts showed max. tensile stress 0.27 N/mm<sup>2</sup> after 7 h in water at 23°.

IC ICM C08L081-02

ICS C08G018-52; C08K005-101; C08K009-04; C08L075-04; C09K003-10

CC 38-3 (Plastics Fabrication and Uses)

ST polysulfide polyether sealing compn tack free; water heat resistance polysulfide polyether sealing material; **urethane prepolymer** unsatd compd sealing compn; paraffin treatment inorg filler sealing compn

IT **Tung oil**

(curable polysulfide compns. for sealing materials)

IT **Polyurethanes**, uses

(polyoxyalkylene-; curable polysulfide compns. for sealing materials)

L59 ANSWER 4 OF 19 HCA COPYRIGHT 2006 ACS on STN

137:264553 Curable polythiourethane compositions with reduced residue tack and luster on cured surface for sealants, adhesives and coatings. Hirose, Toru; Chen, Yi Chiu (Toray Thiokol K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2002284837 A2 **20021003**, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-82567 20010322.

AB The compn. comprises (a) a polymer having  $\geq 2$  thiol groups/mol, (b) a compd. having  $\geq 2$  isocyanate groups/mol, (c) air-oxidizable compd. having an unsatd. group, (d) a curing catalyst contg.  $\geq 1$  hindered amine and (e) a curing catalyst contg.  $\geq 1$  metal soap. Thus, 400 parts main component comprising polymer prepd. from polypropylene glycol, epichlorohydrin and Thikol

LP 55 (polysulfide) 100, dioctyl phthalate 44, Nikanol LLL (m-xylene-formaldehyde copolymer) 13, CaCO<sub>3</sub> 232, TiO<sub>2</sub> 5, JP 333E 1 and Excel O 95R 5 parts was mixed with 72 parts **urethane prepolymer** obtained from polypropylene glycol, xylylene diisocyanate and **tung oil**, and 0.2 parts LA 62 (hindered amine), and aged with sand to give a cured sealant showing no residual tack and luster, and good elongation.

- IC ICM C08G018-52
- CC 42-11 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 38
- ST polythiourethane **tung oil** curable sealant;  
polyoxyalkylene polysulfide **polyurethane** polythiourethane  
adhesive; coating polyoxyalkylene polysulfide **polyurethane**  
polythiourethane
- IT **Tung oil**  
(curable polythiourethane compns. for sealants, adhesives and  
coatings)
- IT Polysulfide rubber  
(polymers with epichlorohydrin, polypropylene glycol and  
**urethane prepolymer**; curable polythiourethane  
compns. for sealants, adhesives and coatings)
- IT Polyoxyalkylenes, uses  
(polymers with epichlorohydrin, polysulfide rubber and  
**urethane prepolymer**; curable polythiourethane  
compns. for sealants, adhesives and coatings)
- IT **Polyurethanes**, uses  
(polyoxyalkylene-polysulfide-polythiourethane-; curable  
polythiourethane compns. for sealants, adhesives and coatings)
- IT Polysulfides  
(polyoxyalkylene-polythiourethane-**polyurethane**-;  
curable polythiourethane compns. for sealants, adhesives and  
coatings)
- IT Polyoxyalkylenes, uses  
(polysulfide-polythiourethane-**polyurethane**-; curable  
polythiourethane compns. for sealants, adhesives and coatings)
- IT **Polyurethanes**, uses  
(thio-, polyoxyalkylene-polysulfide-**polyurethane**-;  
curable polythiourethane compns. for sealants, adhesives and  
coatings)
- IT **Polyurethanes**, uses  
(thio-; curable polythiourethane compns. for sealants, adhesives  
and coatings)
- IT 106-89-8DP, Epichlorohydrin, polymers with polypropylene glycol,  
polysulfide rubber and **urethane prepolymer**  
25322-69-4DP, Polypropylene glycol, polymers with epichlorohydrin,  
polysulfide rubber and **urethane prepolymer**  
54786-28-6DP, Polypropylene glycol-Xylylene diisocyanate copolymer,  
reaction products with thiol-contg. polymers

(curable polythiourethane compns. for sealants, adhesives and coatings)

L59 ANSWER 5 OF 19 HCA COPYRIGHT 2006 ACS on STN

136:386913 Quickly shaped anticorrosion composite band of epoxy coal asphalt with fabrics. Zhang, Lian (Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1304972 A **20010725**, 5 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 2000-134170 20001206.

AB The anticorrosion band is prepd. by: mixing epoxy resin 5-90, coal tar pitch 5-50, carbolineum 2-40, talc powder 1-20, mica powder 3-50, **tung oil** 2-10 and solvent 5-40 parts to obtain component A; mixing **polyurethane prepolymer** 5-80 and solvent 5-80 parts to obtain component B; mixing component A 1-5 and B 1 parts, applying on nonwoven fabric, and curing to obtain the product.

IC ICM C09K015-04

ICS B32B033-00

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 45

IT **Polyurethanes**, uses

(in compn. of anticorrosion composite band of epoxy coal asphalt with fabrics)

IT **Tung oil**

(in compn. of anticorrosion composite band of epoxy coal asphalt with fabrics)

L59 ANSWER 6 OF 19 HCA COPYRIGHT 2006 ACS on STN

135:154191 Curable compositions useful for sealants, adhesives, and coatings. Hirose, Toru; Sakae, Kazuhisa (Toray Thiokol K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2001220423 A2 **20010814**, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-33034 20000210.

AB The compns. comprise polymers having  $\geq 2$  thiol groups in a mol., compds. having  $\geq 2$  isocyanate groups in a mol., air-oxidizable compds. having unsatd. groups, and org. polysulfides having one  $S_x$  ( $x \geq 2$  integer) moiety in a mol. Thus, a base resin contg. a polymer prepd. from polypropylene glycol, epichlorohydrin, and Thiokol LP 55 (polysulfide), plasticizers, fillers, and catalysts was mixed with a **urethane prepolymer** prepd. from polypropylene glycol, xylene diisocyanate, and **tung oil** and DTSP (di-tert-dodecyl polysulfide) and aged with siliceous sand to give a cured sealant showing matte surface, no residual tack, and good elongation.

IC ICM C08G018-52

ICS C08G018-66; C08G018-67; C08K005-09; C08K005-37; C08L075-04; C09K003-10; C09D175-14; C09J175-14

CC 42-11 (Coatings, Inks, and Related Products)

Section cross-reference(s): 38

IT **Polyurethanes**, uses

(thio-, polyoxyalkylene-polysulfide-; thiourethane-forming curable compns. for sealants, adhesives, and coatings with nontacky matte surfaces and good elongation)

IT **Tung oil**

(thiourethane-forming curable compns. for sealants, adhesives, and coatings with nontacky matte surfaces and good elongation)

L59 ANSWER 7 OF 19 HCA COPYRIGHT 2006 ACS on STN

134:224138 Curable compositions with good surface weather resistance for sealants. Sakae, Kazuhisa; Hirose, Toru (Toray Thiokol K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2001064504 A2 **20010313**, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-239221 19990826.

AB The compns. with less residual tackiness and no dust sticking during initial curing process comprise (A) polymers having  $\geq 2$  SH in a mol., (B) compds. having  $\geq 2$  NCO in a mol., and (C) UV absorbers. Thus, a main agent contg. a polymer [prepd. from polypropylene glycol diglycidyl ether and Thikol LP 55 (polysulfide)] 100, diheptyl phthalate 44, Nikanol LLL (m-xylene-HCHO copolymer) 20, CaCO<sub>3</sub> 217.1, TiO<sub>2</sub> 5, additives 3.4, and LA 32 [2-(2-hydroxy-5-methylphenyl) benzoate] 0.5 part was blended with 67 parts polypropylene glycol XDI adduct and cured on an Al sheet to give a sheet-type cured product with good UV and weather resistance.

IC ICM C08L075-04

ICS C08G018-50; C08G018-52; C08K005-00; C08L061-18; C08L091-00; C09K003-10

CC 42-11 (Coatings, Inks, and Related Products)

IT **Tung oil**

(curable compns. contg. polythiols and polyisocyanates with good surface weather resistance for sealants)

IT **Polyurethanes**, uses

(polyoxyalkylene-, reaction products with polysulfide rubber; curable compns. contg. polythiols and polyisocyanates with good surface weather resistance for sealants)

IT 39409-92-2DP, Polypropylene glycol diglycidyl ether homopolymer, reaction products with sulfide rubber and polypropylene-XDI **prepolymer** 54786-28-6DP, Polypropylene glycol-xylylene diisocyanate copolymer, reaction products with polypropylene glycol glycidyl ether and sulfide rubber

(curable compns. contg. polythiols and polyisocyanates with good surface weather resistance for sealants)

L59 ANSWER 8 OF 19 HCA COPYRIGHT 2006 ACS on STN

134:30481 Curable compositions for sealants, adhesives, and coatings



with reduced tack and luster and good heat resistance. Hirose, Toru; Sakae, Kazuhisa; Echigoya, Yukishige (Toray Thiokol K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000344853 A2 **20001212**, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-157505 19990604.

- AB The compns. contain polymers having  $\geq 2$  SH, polyisocyanates, unsatd. compds. oxidizable by air, and fatty acid esters. Thus, polypropylene glycol was treated with epichlorohydrin followed by Thiokol LP 55 (polysulfide) to give a SH-contg. polymer, 100 parts of which was mixed with plasticizers, fillers, catalysts, additives, **urethane prepolymer** (manufd. from polypropylene glycol and xylylene diisocyanate) 67, **tung oil** 4, and Excel T 95 (stearic acid monoglyceride) 5 parts to give a sealant showing no tack and no luster after curing and good retention of tensile stress and elongation after heating (90°, 14 days).
- IC ICM C08G018-52  
ICS C08K005-09; C08K005-10; C08L075-04; C09D175-04; C09J175-04; C09K003-10
- CC 42-11 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 38
- ST thiol polymer polyisocyanate fatty ester sealant; polyoxypropylene polysulfide thiol polyisocyanate sealant; **tung oil** polyoxypropylene thiol polyisocyanate sealant; adhesive thiol polymer polyisocyanate fatty ester; coating thiol polymer polyisocyanate fatty ester; heat resistant sealant thiol polymer polyisocyanate
- IT **Tung oil**  
(curable compns. for sealants, adhesives, and coatings with reduced tack and luster and good heat resistance)
- IT **Polyurethanes**, uses  
(polyoxyalkylene-polysulfide-; curable compns. for sealants, adhesives, and coatings with reduced tack and luster and good heat resistance)
- IT Polysulfides  
(polyoxyalkylene-**polyurethane**-; curable compns. for sealants, adhesives, and coatings with reduced tack and luster and good heat resistance)
- IT Polyoxyalkylenes, uses  
(polysulfide-**polyurethane**-; curable compns. for sealants, adhesives, and coatings with reduced tack and luster and good heat resistance)

L59 ANSWER 9 OF 19 HCA COPYRIGHT 2006 ACS on STN

133:45015 Curable thiourethane compositions for sealants with nontacky matte surfaces. Echigoya, Yukishige; Sakae, Kazuhisa (Toray Thiokol K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000178334 A2 **20000627**, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION:

- JP 1998-353949 19981127. PRIORITY: JP 1998-299077 19981006.
- AB The compns., which show good curing without sunlight, contain polymers having  $\geq 2$  SH/mol, compds. having  $\geq 2$  NCO/mol, and air-oxidizable unsatd. compds. Thus, a sealant comprised (a) a main agent contg. 100 parts SH-contg. polymer [prepd. from polypropylene glycol, epichlorohydrin, and Thiokol LP 55 (polysulfide)], plasticizer, fillers, and additives, (b) 67 parts polypropylene glycol-xylylene diisocyanate **prepolymer**, and (c) 1 part **tung oil**.
- IC ICM C08G018-40  
ICS C08G018-52; C08L075-04; C08L081-04; C08L091-00; C09K003-10
- CC 42-11 (Coatings, Inks, and Related Products)
- ST thiourethane sealant nontacky matte surface; polyoxyalkylene polysulfide polyisocyanate **tung oil** sealant
- IT **Polyurethanes**, uses  
**Polyurethanes**, uses  
**Polyurethanes**, uses  
(thio-, polyoxyalkylene-polysulfide-; thiourethane sealants with nontacky matte surfaces)
- IT **Tung oil**  
(thiourethane sealants with nontacky matte surfaces)
- L59 ANSWER 10 OF 19 HCA COPYRIGHT 2006 ACS on STN
- 131:33044 Coating compositions from oil modified **polyurethane** dispersions. Tomko, Revathi R.; Varone, Barbara J. (The Sherwin-Williams Company, USA). U.S. US 5912299 A **19990615**, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1995-474292 19950607.
- AB The compns., having relatively low VOC (volatile org. compd.) comprise **polyurethane**-urea aq. dispersions having a particle size  $\leq 0.4$   $\mu\text{m}$ , wherein the dispersions are obtained by dispersing isocyanate functional **prepolymers** into water with weak bases and admixing diamine chain extenders in the presence of catalysts and modifiers of C6-22 aliph. chain-contg. anhydride-functional fatty acids and/or oils. Thus, a dispersion was made by mixing Rucoflex 1015-120 (0.54 equiv of OH; a mixt. of polyester diol based on neopentyl glycol, hexanediol and adipic acid), dimethylolpropionic acid (0.46 equiv of OH), trimethylolpropane (0.166 equiv of OH), 1,4-cyclohexane dimethanol (0.138 equiv of OH) and benzene-1,3-bis(1-isocyanato-1-methylethyl) (2.09 equiv of NCO) in water contg. Me pyrrolidinone and dibutyltin dilaurate, neutralizing with triethylamine, charging ethylenediamine, butoxy ethanol and Aquamac 1610 and reacting for 45 min.
- IC ICM C08L075-02  
ICS C08L075-04; C08G018-30; C08G018-10
- INCL 524840000
- CC 42-10 (Coatings, Inks, and Related Products)

- ST oil modified **polyurethane** urea aq coating; fatty acid modified **polyurethane** urea dispersion; emulsion polymn **polyurethane** volatile org compd
- IT Vegetable  
(anhydride-functional, **polyurethane** urea modified by; coating compns. from oil modified **polyurethane** dispersions)
- IT Castor oil  
Linseed oil  
Soybean oil  
Sunflower oil  
**Tung oil**  
(anhydride-functional, **polyurethane** urea modified by; coating compns. from oil modified **polyurethane** dispersions)
- IT Fatty acids, uses  
(castor-oil, dehydrated, anhydride-functional, **polyurethane** urea modified by; coating compns. from oil modified **polyurethane** dispersions)
- IT Polymerization  
(emulsion; coating compns. from oil modified **polyurethane** dispersions)
- IT Fatty acids, uses  
(linseed-oil, anhydride-functional, **polyurethane** urea modified by; coating compns. from oil modified **polyurethane** dispersions)
- IT **Polyurethanes**, uses  
**Polyurethanes**, uses  
(polyurea-, aliph. chain-contg. anhydride-functional fatty acid- or oil-modified; coating compns. from oil modified **polyurethane** dispersions)
- IT Polyureas  
Polyureas  
(**polyurethane**-, aliph. chain-contg. anhydride-functional fatty acid- or oil-modified; coating compns. from oil modified **polyurethane** dispersions)
- IT Fatty acids, uses  
(soya, anhydride-functional, **polyurethane** urea modified by; coating compns. from oil modified **polyurethane** dispersions)
- IT Fatty acids, uses  
(sunflower-oil; coating compns. from oil modified **polyurethane** dispersions)
- IT Fatty acids, uses  
(tall-oil, anhydride-functional, **polyurethane** urea modified by; coating compns. from oil modified **polyurethane** dispersions)
- IT Coating materials

- (water-thinned; coating compns. from oil modified **polyurethane** dispersions)
- IT 77-58-7, Dibutyltin dilaurate 301-10-0, Tin octoate  
(coating compns. from oil modified **polyurethane** dispersions)
- IT 226904-50-3DP, aliph. chain-contg. anhydride-functional fatty acid-  
or oil-modified  
(coating compns. from oil modified **polyurethane** dispersions)
- L59 ANSWER 11 OF 19 HCA COPYRIGHT 2006 ACS on STN  
125:249189 Study on interpenetrating polymer networks synthesized from  
vegetable oils. Yin, Yeping; Yao, Shuren; Zheng, Shuzhen (Huazhong,  
Agriculture Univ., Wuhuan, Peop. Rep. China). Gaofenzi Cailiao  
Kexue Yu Gongcheng, 12(5), 118-121 (Chinese) **1996**. CODEN:  
GCKGEI. ISSN: 1000-7555. Publisher: "Gaofenzi Cailiao Kexue Yu  
Gongcheng" Bianjibu.
- AB Epoxidized castor oil and cotton seed oil were obtained by treating  
the oils with hydrogen peroxide and formic acid. Maleated  
**tung oil** was obtained from **tung**  
**oil** and maleic anhydride by Diels-Alder reaction. A series  
of simultaneous interpenetrating networks (IPN) from these vegetable  
oils and **polyurethanes** was prepd. by bulk polymn. of  
mixts. contg. **polyurethane prepolymer**, chain  
extender, maleated **tung oil**, epoxidized  
vegetable oils, and epoxy resins. Dynamic mech. spectroscopy  
results indicate that the IPNs have good compatibility and excellent  
damping property over a broad temp. range near room temp.
- CC 37-3 (Plastics Manufacture and Processing)
- ST epoxidized vegetable oil **polyurethane** interpenetrating  
network; castor oil **polyurethane** interpenetrating network;  
**tung oil polyurethane** interpenetrating  
network; cotton oil **polyurethane** interpenetrating network;  
epoxy resin **polyurethane** interpenetrating network
- IT Mechanical loss  
(prepn. and properties of interpenetrating polymer networks  
prepd. from epoxidized vegetable **oil**-maleated  
**tung oil** and **polyurethanes** and epoxy  
resins)
- IT Epoxy resins, properties  
Interpenetrating polymer networks  
**Urethane** polymers  
(prepn. and properties of interpenetrating polymer networks  
prepd. from epoxidized vegetable **oil**-maleated  
**tung oil** and **polyurethanes** and epoxy  
resins)
- IT Vibration  
(dampers, prepn. and properties of interpenetrating polymer

- networks prepd. from epoxidized vegetable **oil**-maleated **tung oil** and **polyurethanes** and epoxy resins)
- IT Castor oil  
Cottonseed oil  
(epoxidized, prepn. and properties of interpenetrating polymer networks prepd. from epoxidized vegetable **oil**-maleated **tung oil** and **polyurethanes** and epoxy resins)
- IT **Tung oil**  
(maleated, prepn. and properties of interpenetrating polymer networks prepd. from epoxidized vegetable **oil**-maleated **tung oil** and **polyurethanes** and epoxy resins)
- IT 25068-38-6, E44 25085-99-8, E51 25322-69-4D, Poly(propylene oxide), **polyurethanes** 26471-62-5D, TDI, **polyurethanes**  
(prepn. and properties of interpenetrating polymer networks prepd. from epoxidized vegetable **oil**-maleated **tung oil** and **polyurethanes** and epoxy resins)
- L59 ANSWER 12 OF 19 HCA COPYRIGHT 2006 ACS on STN  
125:198762 Room-temperature-curable **polyurethane** compositions for sealing materials with good weather and heat resistance. Yamada, Juji; Kikuchi, Genichi (Bridgestone Corp, Japan). Jpn. Kokai Tokkyo Koho JP 08176529 A2 **19960709** Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-323372 19941226.
- AB Title compns. comprise 100 parts **urethane prepolymers**, hardeners, preferably polyols or polyamines, and 3-20 parts (vs. 100 parts the **prepolymers**) unsatd. compds. reactive with O in air. Thus, a **urethane prepolymer** 100, polyoxypropylene glycol 80, Pb octylate 10, DOP 33, TiO<sub>2</sub> 12, CaCO<sub>3</sub> 175, and **tung oil** 10 parts were kneaded and cured at room temp. to give a test piece showing good weather resistance, tensile strength 12 kg/cm<sup>2</sup>, and elongation 850%.
- IC ICM C09K003-10  
ICS C08G018-10; C08G018-65; C08L075-04
- ICI C08L075-04, C08L091-00; C08L075-04, C08L009-00
- CC 42-11 (Coatings, Inks, and Related Products)
- ST **tung oil** blend **polyurethane** sealant  
weatherability
- IT Sealing compositions  
(room-temp.-curable **polyurethane** sealing compns. with good weather resistance)
- IT Linseed oil  
**Tung oil**

- (room-temp.-curable **polyurethane** sealing compns. with good weather resistance)
- IT **Urethane** polymers, uses  
(polyoxyalkylene-, room-temp.-curable **polyurethane** sealing compns. with good weather resistance)
- IT 9003-17-2, Polybutadiene  
(of 1,2-configuration; room-temp.-curable **polyurethane** sealing compns. with good weather resistance)
- IT 25322-69-4DP, Polypropylene glycol, polymers with **urethane prepolymers**  
(room-temp.-curable **polyurethane** sealing compns. with good weather resistance)
- L59 ANSWER 13 OF 19 HCA COPYRIGHT 2006 ACS on STN
- 124:11112 Water-dispersible unsaturated **polyurethane** compositions for abrasion-resistant coatings. Naples, Gerald; Petschke, Glenn H.; Yang, Shi (Reichhold Chemicals, Inc., USA). PCT Int. Appl. WO 9523818 A1 **19950908**, 28 pp. DESIGNATED STATES: W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG.  
(English). CODEN: PIXXD2. APPLICATION: WO 1995-US489 19950116. PRIORITY: US 1994-203816 19940301.
- AB Compns. for abrasion-resistant coatings comprise a **prepolymer** having isocyanate groups, acid or amine salt forming groups and ethylenic unsatn., and an active hydrogen-contg. compd. having active hydrogen functionality of two or more; wherein a portion of the **prepolymer** is chain extended with an active hydrogen-contg. compd. having active hydrogen functionality of four or more. The ethylenic unsatn. in the **prepolymer** is provided by an ester polyol form by transesterification of a drying or semidrying oil with a polyol or by esterification of a polyol with an unsatd. fatty acid. A typical coating compn. was prepd. by mixing 1.14 and 0.34 parts Co promoter and 2,2-bipyridyl, resp., with 500 parts dispersion contg. 13.7 parts Et3N, 2.7 parts ethylenediamine, 1.6 parts triethylenetetramine, 502.2 parts water, and a **prepolymer** prepd. by reaction of dimethylolpropionic acid 18.2, adipic acid-neopentyl glycol-1,6-hexanediol copolymer 24, 4,4'-methylenebis(isocyanatocyclohexane) 96.4 parts with 120 parts oil ester polyol prepd. by reaction of linseed oil with pentaerythritol.
- IC ICM C08G018-08  
ICS C08G018-10; C08G018-36; C09D175-04
- CC 42-10 (Coatings, Inks, and Related Products)
- ST linseed oil modified **polyurethane** coating; pentaerythritol ester polyurea **polyurethane** coating;

- methylenebisisocyanatocyclohexane polyurea **polyurethane** coating; hexanediol polyurea **polyurethane** coating; neopentyl glycol polyurea **polyurethane** coating; adipic acid polyurea **polyurethane** coating; polyester polyurea **polyurethane** coating; dimethylolpropionic acid polyurea **polyurethane** coating; triethylenetetramine polyurea **polyurethane** coating; ethylenediamine polyurea **polyurethane** coating; abrasion resistant **polyurethane** coating
- IT **Urethane** polymers, uses  
(water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Coating materials  
(abrasion-resistant, water-thinned, water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(cottonseed-oil, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(dehydrated castor-oil, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(linseed-oil, esters, with pentaerythritol, polyester-polyurea-**polyurethane** derivs.; unsatd. water-dispersible **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(olive-oil, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT **Urethane** polymers, uses  
(polyester-polyurea-, block, water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(safflower-oil, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(sardine-oil, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(soya, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(sunflower-oil, esters, with polyols, **polyurethane**

- derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(tall-oil, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(**tung-oil**, esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT Fatty acids, uses  
(unsatd., esters, with polyols, **polyurethane** derivs.; water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- IT 107-15-3DP, Ethylenediamine, oil-contg. polyester-polyurea-**polyurethanes**, salts 112-24-3DP, Triethylenetetramine, oil-contg. polyester-polyurea-**polyurethanes**, salts 112-57-2DP, Tetraethylenepentamine, oil-contg. polyester-polyurea-**polyurethanes**, salts 115-77-5DP, Pentaerythritol, oil-contg. polyester-polyurea-**polyurethanes**, salts 124-04-9DP, Adipic acid, oil-contg. polyester-polyurea-**polyurethanes**, salts 126-30-7DP, Neopentyl glycol, oil-contg. polyester-polyurea-**polyurethanes**, salts 629-11-8DP, 1,6-Hexanediol, oil-contg. polyester-polyurea-**polyurethanes**, salts 4767-03-7DP, Dimethylolpropionic acid, oil-contg. polyester-polyurea-**polyurethanes**, salts 5124-30-1DP, Methylenebis(4-isocyanatocyclohexane), oil-contg. polyester-polyurea-**polyurethanes**, salts  
(water-dispersible unsatd. **polyurethane** compns. for abrasion-resistant coatings)
- L59 ANSWER 14 OF 19 HCA COPYRIGHT 2006 ACS on STN  
117:28938 Curable composition containing a **urethane prepolymer**, especially for use as a sealant. Kawamura, Jo; Hagiwara, Kazuo; Wakabayashi, Hiroshi (Kanegafuchi Kagaku Kogyo K. K., Japan). Eur. Pat. Appl. EP 477899 A2 **19920401**, 8 pp.  
DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW.  
APPLICATION: EP 1991-116332 19910925. PRIORITY: JP 1990-258195 19900926.
- AB The title compn., contg. a **urethane prepolymer**, a photocurable substance, and an unsatd. compd. reactive with O in air, shows good resistance to cracking and fouling (e.g., by dust) after curing. A compn. contained a **urethane prepolymer**, a polyether diol, Aronix M 8060, **tung oil**, rutile, CaCO<sub>3</sub>, carbon black, and additives.
- IC ICM C08L075-04  
ICS C08F283-00; C08F299-00
- CC 42-11 (Coatings, Inks, and Related Products)



- ST crack resistance **polyurethane** sealant; dust repellency sealant **polyurethane**; soil repellency sealant **polyurethane**; crosslinking **polyurethane** sealant; acrylate **polyurethane** sealant; **tung oil polyurethane** sealant; crosslinking **polyurethane** sealant; drying oil **polyurethane** sealant
- IT Soilproofing  
(of sealing compns. based on **urethane prepolymers**)
- IT Linseed oil  
**Tung oil**  
(sealing compns. contg. **polyurethanes** and, crack- and fouling-resistant)
- IT **Urethane** polymers, uses  
(sealing compns. contg., crack- and fouling-resistant)
- IT Sealing compositions  
(**urethane prepolymer**-based, with crack and fouling resistance after curing)
- IT 9003-17-2 15625-89-5, Aronix M 309 24968-99-8, Poly(vinyl cinnamate) 29570-58-9, Aronix M 400 62886-89-9, Aronix M 8060  
(sealing compns. contg. **polyurethanes** and, crack- and fouling-resistant)
- L59 ANSWER 15 OF 19 HCA COPYRIGHT 2006 ACS on STN  
111:196955 Curable soilproofing compositions with reduced residual tack. Murata, Tsutomu; Tanaka, Hirotada (Sanyo Chemical Industries Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01146959 A2 **19890608** Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-304970 19871202.
- AB Title compns. comprise compds. contg.  $\geq 1$  active Si functional group, air-curable compds. (for example, drying oils and their derivs.), and curing catalysts. Thus, polypropylenepolyol (mol. wt. 3000) 100, HDI 7.5, and dibutyltin dilaurate 0.01 part were heated at 100° for .apprx.8 h, then heated with 4.0 parts  $\gamma$ -aminopropyltrimethoxysilane at 80° for .apprx.1 h to give a trimethoxysilyl-terminated **polyurethane**, 300 parts of which was mixed with **tung oil** 45, CaCO<sub>3</sub> 495, TiO<sub>2</sub> 50, DOP 150, Sanol LS 744 1, and Irganox 1076 1 part to give a curing compn. (I). A curing agent composed of stannous octoate 30, DOP 20, laurylamine 5, Co naphthenate 10, and CaCO<sub>3</sub> 40 parts was mixed with I at ratio 10:100 and cured at 20° into a sheet, which showed residual tack 0.05 kg vs. 3.1 kg for a control consisting of 100 parts I less the **tung oil** and 10 parts of the curing agent.
- IC ICM C08L101-10  
ICS C08L091-00
- CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 37, 38

- ST curable soilproof alkoxysilyl **urethane prepolymer**  
; drying oil alkoxysilyl **urethane prepolymer**;  
curing catalyst alkoxysilyl **urethane prepolymer**;  
**polyurethane** coating alkoxysilyl
- IT Linseed oil  
**Tung oil**  
(alkoxysilyl-terminated **urethane prepolymers**  
contg. curing catalysts and, soilproof, with reduced residual  
tack)
- IT Crosslinking catalysts  
(for alkoxysilyl-terminated **urethane prepolymer**  
compns.)
- IT **Urethane** polymers, uses and miscellaneous  
(**prepolymers**, alkoxysilyl-terminated, contg. drying  
oils and curing catalysts, soilproof, with reduced residual tack)
- IT Coating materials  
(antisoiling, alkoxysilyl-terminated **urethane**  
**prepolymers** contg. drying oils and curing catalysts, with  
reduced residual tack)
- IT Naphthenic acids, compounds  
(cobalt salts, curing catalyst, alkoxysilyl-terminated  
**urethane prepolymers** contg. drying oils and,  
soilproof, with reduced residual tack)
- IT 124-22-1, Laurylamine 557-09-5, Zinc octanoate 52722-81-3  
(curing catalyst, alkoxysilyl-terminated **urethane**  
**prepolymers** contg. drying oils and, soilproof, with  
reduced residual tack)
- IT 301-10-0, Stannous octoate  
(curing catalysts, alkoxysilyl-terminated **urethane**  
**prepolymers** contg. drying oils and, soilproof, with  
reduced residual tack)

L59 ANSWER 16 OF 19 HCA COPYRIGHT 2006 ACS on STN

102:204724 **Tung oil**-modified MOCA as a new chain  
extender in the synthesis of **polyurethanes**. Zhou, Qitao;  
Xie, Shangli; Chen, Ruizhi; Gao, Xuemin (Chengdu Inst. Org. Chem.,  
Acad. Sin., Chengdu, Peop. Rep. China). Hecheng Xiangjiao Gongye,  
8(2), 115-18 (Chinese) **1985**. CODEN: HXGOEA. ISSN:  
1000-1255.

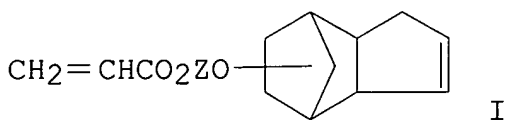
AB With **tung oil**-modified MOCA as chain extender,  
excellent **polyurethanes** can be obtained from Adiprene,  
polytetramethylene glycol-toluene diisocyanate (TDI), polypropylene  
glycol-TDI, copolytetramethylene-propylene glycol-TDI, and modified  
**polyurethane** adhesive **prepolymers**. With increase  
of the **tung oil** content in the  
**polyurethane** to .apprx. 20% the tensile strengths of the  
**polyurethanes** remained high. The pot life of  
**polyurethane** contg. this extender is 2-3 times longer than

that of MOCA. In addn., the environmental pollution of the workplace is reduced.

- CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 39, 59
- ST **polyurethane** chain extender modified MOCA; **tung oil** modified MOCA extender
- IT Rubber, **urethane**, uses and miscellaneous  
(chain extender for, **tung oil**-modified MOCA as)
- IT **Urethane** polymers, uses and miscellaneous  
(chain extenders for, **tung oil**-modified MOCA as)
- IT Environmental pollution  
(prevention of, by use of **tung oil**-modified MOCA in prepn. of **polyurethanes**)
- IT 25190-06-1DP, polymers with TDI and **tung oil**-modified MOCA 25302-85-6DP, polymers with TDI and **tung oil**-modified MOCA 25322-69-4DP, polymers with TDI and **tung oil**-modified MOCA 26471-62-5DP, polymers with polyoxyalkylene polyols and **tung oil**-modified MOCA  
(prepn. of, with extended pot life and reduced toxicity)

L59 ANSWER 17 OF 19 HCA COPYRIGHT 2006 ACS on STN  
92:199920 Monomer materials. (Rohm and Haas Co., USA). Neth. Appl. NL  
7806576 **19791221**, 65 pp. (Dutch). CODEN: NAXXAN.  
APPLICATION: NL 1978-6576 19780619.

GI



- AB Compns. which have low volatility, odor, viscosity, and hydrophobicity and high hydrolysis-, acid-, and alkali- resistance and are useful as coatings contain I (Z = C1-12 alkylene or oxyalkylene), a drier, a stabilizer, ≥1 of a drying oil, a film-forming polymer, an org. polyisocyanate or its **prepolymer**, or a polyisocyanate reaction product with an alkyd resin or drying oil, and optionally ≥1 of C8-20 alkyl or alkenyl (meth)acrylates, C1-20 dialkyl fumarates, maleates, or itaconates, vinyl C8-20 alkenoates or alkanoates, dicyclopentenyl (meth)acrylates, or polyenes. Thus, ethylene glycol mono(dicyclopentenyl) ether [64998-38-5] 971.5, acrylic acid

[79-10-7] 396, p-toluenesulfonic acid 19.0, hydroquinone 0.75, and heptane 1000 g were refluxed 4 h while 67 g water was removed and then heated to 115° over 6 h while 400 mL heptane was removed, giving I (Z = CH<sub>2</sub>CH<sub>2</sub>) (II) [68169-12-0]. A long-oil alkyd was dild. with an equal wt. of II, pigmented with TiO<sub>2</sub> at pigment-binder ratio 40:60, mixed with 0.2% Co drier (as Co naphthenate), dild. to 56% solids, and stored 1 wk in an air-tight container. The compn. was coated on panels and cured 1 wk under ambient conditions, giving a coating with KHN hardness 5.3, pencil hardness F and mandrel bend flexibility 12.7 mm, compared with 2.2, B, and 3.2 for a control without II. The unmodified compn. also had higher viscosity and gave cured coatings with lower detergent resistance than the II-contg. compn.

IC C09D003-00; C08F020-28; C08K005-10; C08F242-00

CC 42-10 (Coatings, Inks, and Related Products)

IT Rubber, chlorinated

**Urethane** polymers, uses and miscellaneous

(coatings, modified with dicyclopentenylalkyl acrylates)

IT Castor oil

Linseed oil

Safflower oil

Soybean oil

**Tung oil**

(reaction products with dicyclopentenylalkyl acrylates, for coatings)

L59 ANSWER 18 OF 19 HCA COPYRIGHT 2006 ACS on STN

81:26502 Tar **urethane** resins. Ikoma, Tadashi; Ohtsuka, Nobuyuki; Sakanishi, Hiroshi (Matsushita Electric Works, Ltd.). Jpn. Tokyo Koho JP 48037158 B4 **19731109** Showa, 2 pp.

(Japanese). CODEN: JAXXAD. APPLICATION: JP 1969-49798 19690624.

AB Resins having good elasticity and water and chem. resistance were prepd. by mixing the **prepolymer** of an isocyanate, e.g. tolylene diisocyanate [26471-62-5] or diphenylmethane diisocyanate [101-68-8], with a polyether with tar, hardener, and drying oil, e.g. linseed **oil** or **tung oil**.

IC C08G; C09D; C10C

CC 36-3 (Plastics Manufacture and Processing)

ST **polyurethane** tar resin manuf; isocyanate polyether tar waterproofing; chem resistance **polyurethane** tar; linseed oil **polyurethane** tar; **tung oil** **polyurethane** tar

IT Tar

(-urethane polymer compns., waterproofed and chem. resistant)

IT **Urethane** polymers, properties

(tar-contg., waterproof and chem. resistant)

IT Chemically resistant materials

Waterproof materials and Water-repellent materials  
(**urethane** polymer-tar compns.)

IT Linseed oil

**Tung oil**

(**urethane** polymer-tar compns. contg., waterproof and chem. resistant)

IT 101-68-8D, Benzene, 1,1'-methylenebis[4-isocyanato-, polymer with polyethers 26471-62-5D, Benzene, 1,3-diisocyanatomethyl-, polymer with polyethers

(**urethane** polymer compns. contg., waterproof and chem. resistant)

L59 ANSWER 19 OF 19 HCA COPYRIGHT 2006 ACS on STN

69:68407 Surface coating compositions. (Tercol Ltd.). Fr. FR 1498013  
**19671013**, 6 pp. (French). CODEN: FRXXAK. APPLICATION: FR 19661028.

AB Liq. coating compns., which are used in the prepn. of tiles, plates, walls, and floor coatings, are prepd. comprising SiC, SiO<sub>2</sub>, clay, or CaCO<sub>3</sub>, or resin particles and a resin matrix. Thus, to a mixt. contg. an unsatd. polyester (Bakelite SR 19 148) 100, stearyl laurate 0.2, 6% Co naphthenate 1, pigments 10, CaCO<sub>3</sub> 50, and hollow microscopic PhOH-HCHO spheres 15 parts, 20 parts 67% trimethylolpropane-toluene diisocyanate **prepolymer** in styrene and 1 part MeEt Ketone peroxide were added. The fluid compn. obtained was applied as thin hard films, which could be converted to plates. Polyester foam pieces are prepd. by adding sep. 30 parts **tung oil**, 8 parts MeEt ketone peroxide, 110 parts diisocyanatodiphenylmethane, and 450 parts sand to a mixt. contg. unsatd. polyester (Leguval E 90) 180, polyetherpolyol (Desmophen 550 U) 60, castor oil 20, pigment 50, and SiO<sub>2</sub> 250 parts followed by fragmentation of the thin foam.

IC C08G; E04F

CC 42 (Coatings, Inks, and Related Products)

IT **Urethane** polymers, uses and miscellaneous  
(coatings of polyester-based, for floors and tiles and walls)

IT Coating materials

(polyester-based **urethane** polymers, for floors and tiles and walls)